XR-C210/C212

SERVICE MANUAL

AEP Model
UK Model
XR-C210
German Model
XR-C212

Photo: XR-C210

Mode Name Using Similar Mechanism	NEW
Tape Transport Mechanism Type	MG-50A-39

SPECIFICATIONS

Cassette player section

Tape track	4-track 2-channel stereo
Wow and flutter	0.08 % (WRMS)
Frequency response	30 – 18,000 Hz
Signal-to- noise ratio	
Cassette type	
TYPE II, IV	61 dB
TYPE I	58 dB

Tuner section

FM

Tuning range	87.5 – 108.0 MHz
Antenna terminal	External antenna connector
Intermediate frequency	10.7 MHz
Usable sensitivity	8 dBf
Selectivity	75 dB at 400 kHz
Signal-to-noise ratio	65 dB (stereo), 70 dB (mono)
Harmonic distortion at 1 kHz	0.5% (stereo), 0.3% (mono)
Separation	35 dB at 1 kHz
Frequency response	30 – 15,000 Hz
Capture ratio	2 dB

MW/LW (SW, for the XR-C212)

Tuning range	MW: 531 – 1,602 kHz LW: 153 – 281 kHz SW: 5,950 – 6,205 kHz
Antenna terminal	External antenna connector
Intermediate frequency	10.71 MHz/450 kHz
Sensitivity	MW: 30 µV LW: 50 µV SW: 50 µV

Power amplifier section

Outputs	Speaker outputs (sure seal connectors)
Speaker impedance	4 – 8 ohms
Maximum power output	22 W × 4 (at 4 ohms)

General

Output lead	Power antenna relay control lead Power amplifier control lead
Tone controls	Bass ±8 dB at 100 Hz Treble ±8 dB at 10 kHz
Power requirements	12 V DC car battery (negative ground)
Dimensions	Approx. 186 × 57 × 170 mm (w/h/d) not incl. projecting parts and controls
Mounting dimension	Approx. 182 × 53 × 153 mm (w/h/d) not incl. projecting parts and controls
Mass	Approx. 1.3 kg
Supplied accessories	Power connecting cord (1) Mounting hardware (1 set) Front panel case (1)
Optional accessories	Bus (Unilink) cable (supplied with an RCA pin cord) RC-61 (1m), RC-62 (2m) RCA pin cord RC-63 (1m), RC-64 (2m), RC-65 (5m)

Design and specifications are subject to change without notice.

FM/MW/LW CASSETTE CAR STEREO
XR-C210

FM/MW/SW CASSETTE CAR STEREO
XR-C212

SONY®

MICROFILM

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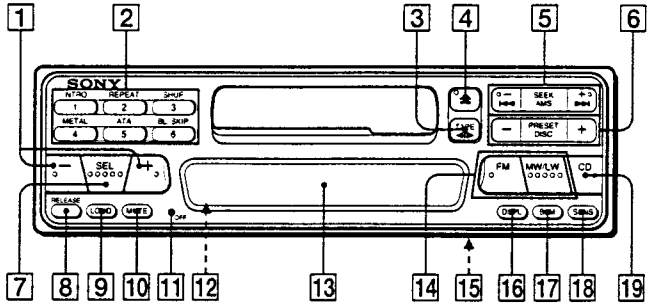
Button Locations



Refer to the pages in ● for details.

1 (volume/bass/treble/balance/fader control) button ❺❾

2 During radio reception:
Preset number buttons ❽

During tape/CD playback:

- INTRO button ❺❿⓫
- REPEAT button ❺❿⓫
- SHUF button ❾⓫
- METAL button ❻
- ATA (Automatic Tuner Activation) button ❻
- BL.SKIP button ❻❾

3 TAPE/◄II► (playback/transport direction change) button ❺

4 ≙ (eject) button ❺❾

5 SEEK/AMS button ❻❼❾❿

6 PRESET/DISC button ❺❻❼❽❿

7 SEL (control mode select) button ❺❾

8 RELEASE (front panel release) button ❹⓬

9 LOUD (loudness) button ❾

10 MUTE button ❾

11 OFF button ❹❺❾

12 Reset button (located on the front side of the unit hidden by the front panel) ❷
Press this button when you use this unit for the first time, when you have changed the car battery, or when the buttons of this unit do not function properly.

13 Display window

14 XR-C210:
(radio on/band select) button ❺❼❽

XR-C212:
(radio on/band select) button ❺❼❽
(traffic announcement) button ❾

15 POWER SELECT switch (located on the botton of the unit)
See "POWER SELECT Switch" in the installation/connections manual.

16 DSPL (display mode change/time set) button ❺

17 BTM (Best Tuning Memory) button ❽

18 SENS (sensitivity adjust) button ❼

19 CD (disc play/CD changer select) button ❺❿

The illustration of the front panel in this manual is of the XR-C210.

E

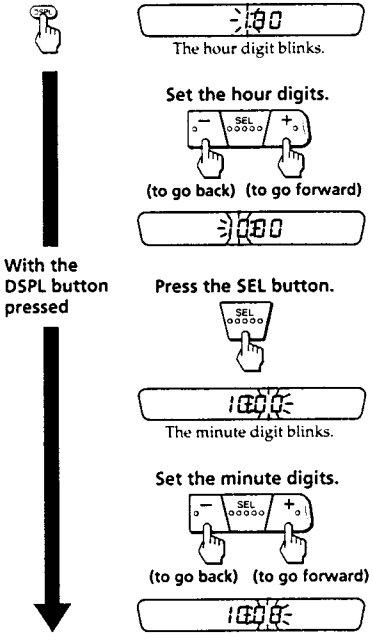
Setting the Clock

The clock has a 24-hour digital indication.

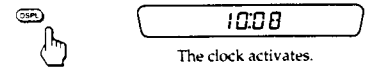
For example, setting it to 10:08

1 Display the time.
(Press the OFF or the DSPL button during the unit operation.)

2 Press the DSPL button for more than two seconds.

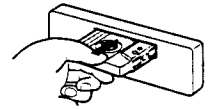

The hour digit blinks.
Set the hour digits.
(to go back) (to go forward)
With the DSPL button pressed
Press the SEL button.
The minute digit blinks.
Set the minute digits.
(to go back) (to go forward)

3 Release the DSPL button.



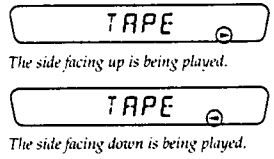
Listening to Tape Playback

After inserting the cassette, playback will start automatically.



If a cassette is already inserted, press the TAPE button to start playback.
If you press during playback, the tape transport direction will change.

Indication of Tape Transport Direction



To stop playback,
eject the cassette by pressing the ≙ button or press the OFF button.
Playback stops also when you select another source (radio, CD) by pressing the FM, MW/LW, (TUNER) or CD button.

Ejecting the Cassette

Press the ≙ button.

Fast-winding the Tape

To start playback during rewinding or fast-forwarding, press the TAPE button.

E

Cassette Player Operation

SECTION 1
GENERAL

This section is extracted from instruction manual.

Playing a CrO_2 or Metal Tape

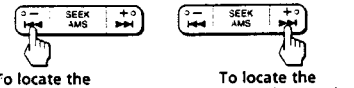
Press the [METAL 4] button when you want to listen to a CrO_2 (TYPE II) or metal (TYPE IV) tape. → "MTL" will appear on the display.
To cancel, press again.

Convenient Functions

Locating the Beginnings of the Tracks

— AMS (Automatic Music Sensor) Function

During playback, press either side of the SEEK/AMS button the number of times you wish to skip the tracks.



To locate the previous tracks — To locate the succeeding tracks

Up to nine tracks can be skipped.

If the blanks between the tracks are shorter than four seconds, or if there are noises, the AMS function will not work. Also, the unit may read long sections of low volume music or quiet sections on a track as blanks between tracks.

Searching the Desired Track

— Intro Scan Function

Press the [INTRO 1] button during playback. → "INTRO" appears on the display.
The first 10 seconds of all the tracks are played. When you find the desired track, press the button once more. The unit returns to the normal playback mode.

Playing Tracks Repeatedly

— Repeat Play Function

Press the [REPEAT 2] button during playback. → "REP" appears on the display.
When the currently played track is over, it will be played again from the beginning.
To cancel this mode, press the button again.

Radio Reception during Fast-forwarding or Rewinding of a Tape

— ATA (Automatic Tuner Activation) Function

Press the [ATA 5] button during playback. → "ATA" appears on the display.
When fast-forwarding or rewinding with the [– PRESET DISC +] button, the tuner will turn on automatically.

Skipping Blanks Automatically during Tape Playback

— Blank Skip Function

Press the [B.SKIP 6] button during playback. → "BL.SKIP" appears on the display.
Blanks longer than eight seconds will be automatically skipped during tape playback.

Tuning in a Station

Searching for the Stations Automatically

— Automatic Tuning

1 Select the desired band.
XR-C210:

FM1 → FM2 → FM3 → FM1

MW ⟷ LW

XR-C212:

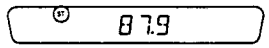
FM1 → FM2 → FM3 → MW → SW → FM1

2 Press either side of the SEEK/AMS button to search for the station (automatic tuning).

For lower frequencies — For higher frequencies

The scanning stops when a station is received. Press either side of the button repeatedly until the desired station is received.

When an FM stereo program with a sufficient signal strength is tuned in,



the "ST" indication will appear.

To avoid the automatic tuning from stopping on stations too frequently (local seek mode), press the [SENS] button momentarily to get the "LCL" indication.
Only the stations with relatively strong signals can be tuned in. The local seek mode functions only when the automatic tuning is in operation.

If FM Stereo Reception is Poor

— Monaural Mode

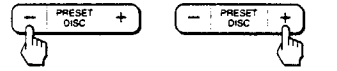
Press the [SENS] button momentarily. → "MONO" appears on the display.
The sound will improve, but it will become monaural.

Tuning in by Adjusting the Frequency

— Manual Tuning

1 Select the desired band.
XR-C210: [FM] [MW/LW]
XR-C212: [TUNER]

2 Press and hold either side of the PRESET/DISC button.
Release the button when the desired station is received.



For lower frequencies — For higher frequencies

PREVENTING ACCIDENTS!
When tuning in during driving, use the automatic tuning and the memory preset tuning instead of the manual tuning.

Memorizing Stations

Memorizing Stations Automatically

— BTM (Best Tuning Memory) Function

This function selects from the currently received band the stations with the strongest signals and memorizes them in order of their frequency.

1 Select the desired band.

XR-C210:

XR-C212:

2 Press the BTM button for more than two seconds.

- When there is no preset number indicated on the display window, stations will be stored on all preset number buttons on the currently selected band.
- When there is a preset number indicated on the display window, the unit will store stations on all preset number buttons from the one currently displayed.

For example, when you select FM2 and preset number 3 is displayed,
the operation will start from preset number 3 on FM2, and will stop at preset number 6 on FM3.

Memorizing Only the Desired Stations

1 Select the desired band.

XR-C210:

XR-C212:

2 Tune in the station which you wish to store on the preset number button.

3 Keep the desired preset number button (1 to 6) pressed for about two seconds until you hear a beep tone.

The number of the pressed preset number button appears on the display window.

Up to 6 stations on each band (FM1, FM2, FM3, MW and LW(SW)) can be stored on the preset number buttons in order of your choice. Therefore, 18 stations can be memorized on FM.
If you try to store another station on the same preset number button, the previously stored station will be erased.

Receiving the Memorized Stations

1 Select the desired band.

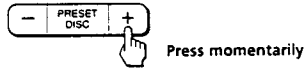
XR-C210:

XR-C212:

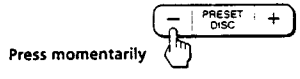
2 Press momentarily the preset number button on which the desired station is stored.

Note
If you press the preset number button for more than two seconds, the currently received station will be memorized again. To receive the previously memorized station, make sure that the preset number button is pressed only momentarily.

Press either side of the PRESET/DISC button momentarily to receive in order the stations stored in the memory (Preset Search Function).



1 → 2 → ... → 5 → 6 → 1 → ...



1 → 6 → 5 → ... → 2 → 1 → ...

Traffic Announcement Reception (XR-C212)

Receiving Traffic Announcements

Press the SDK button. → "SDK" appears on the display.
The unit will search for a traffic information station.
When the station is tuned in, the "SK" indication too will appear.

When a traffic announcement starts → the "SDK" indication will flash.
The reception of the traffic announcement will override the current radio broadcast or tape or CD playback. When the announcement is over, the interrupted radio reception or tape or CD playback will be resumed.

To stop receiving the traffic announcements, press the SDK button again.

Notes
- *While the station is broadcasting a traffic announcement (with the "SDK" indication flashing), the SEEK/AMS, PRESET/DISC, SENS and preset number buttons will not be operational.*
- *While the unit is receiving a traffic information station (with the "SDK" flashing), the BTM function (page 8) cannot be activated.*
- *During MW and SW reception, the SDK function does not work; if you press the SDK button, the unit will automatically switch to FM1.*

Searching for another Traffic Information Station

Press the SEEK/AMS button while the "SDK" indication is lit but not flashing.

Hearing a Traffic Announcement at the Preset Volume Level

1 Adjust the volume to the desired level with the + or − button.

2 Press the 3 button while pressing the SEL button. → A beep sound will be heard and the volume level will be memorized.
When a traffic announcement starts, it is heard at the preset volume level.

Other Functions

Adjusting the Sound Characteristics

1 Select the item you want to adjust by pressing the SEL button repeatedly.

VOL (volume) → BAS (bass) → TRE (treble) → BAL (balance) → FAD (fader) → VOL (volume)

2 Adjust the selected item by pressing either the + or − button.

Adjust within three seconds after selecting. (After three seconds the button will again serve as volume control button.)

Enjoying Bass and Treble even at Low Volume

— Loudness Function

Press the LOUD button. → "LOUD" will appear on the display.
Bass and treble will be reinforced. To cancel, press again.

Muting the Sound Quickly

— Mute Function

Press the MUTE button. → The "MUTE" indication flashes.
The sound is muted at once. To restore the previous volume level, press again.

This function will be also canceled when:
— the + or OFF button is pressed.
— ejecting a cassette by pressing the ⏏ button during tape playback.

Muting the Beep Tone

Press the 6 button while pressing the SEL button.
To reobtain the beep tone, press these buttons again.

CD Changer Operation

(With the optional CD changer(s) connected)

Playing a CD

Press the CD button.
CD playback starts.

Locating the Beginnings of the Tracks

— AMS (Automatic Music Sensor) Function

During playback, press either side of the SEEK/AMS button the number of times you wish to skip the tracks.

To locate the previous tracks

To locate the succeeding tracks

Locating the Desired Part of a Track

— Manual Search

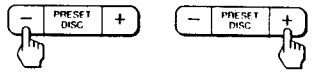
During playback, press and hold either side of the PRESET/DISC button. Release the button when you have found the desired part.

To reverse

To forward

Changing CDs

During playback, press either side of the PRESET/DISC button momentarily.



To return to the previous CD

To advance to the next CD

Selecting CD Changers

(with several CD changers connected)

Press the CD button during CD playback.
Each time you press, another CD changer will be selected.

Searching for the Desired Track — Intro Scan Function

Press the INTRO (1) button during playback.
→ "INTRO" appears on the display.
The first 10 seconds of all the tracks on the currently selected disc are played in order. After the first disc is over, the next CD is played. When two or more CD changers are connected, after the last disc is played, CD play moves on to the next CD changer.

When you find the desired track, press again. The unit returns to the normal CD playback mode.

Playing Repeatedly

— Repeat Play Functions

Playing the currently selected track repeatedly
— Track repeat

Press the REPEAT (2) button during CD playback to get the "REP 1" indication.

Playing the currently selected disc repeatedly
— Disc repeat

Press the REPEAT (2) button during CD playback to get the "REP 2" indication.

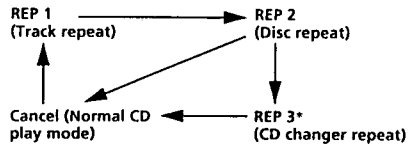
When the last track on the currently selected disc is over, CD playback is repeated from the beginning of that disc.

Playing the discs in the currently selected CD changer repeatedly
— CD changer repeat (when two or more CD changers are connected)

Press the REPEAT (2) button during CD playback to get the "REP 3" indication.

When the last disc in the currently selected CD changer has been played, CD playback will be repeated from the first CD in this changer.

The function of the REPEAT (2) button changes cyclically as follows:



** CD changer repeat (REP 3) mode functions only when two or more CD changers are connected to the unit. When only one CD changer is connected, the "REP 3" indication will not be displayed. In case you press the REPEAT (2) button again while the "REP 2" indication is being displayed, the repeat mode will be canceled.*

Playing Tracks Randomly

— Shuffle Play Functions

Playing the tracks on the currently selected disc randomly
— Disc shuffle play

Press the SHUF (3) button during CD playback to get the "SHUF 1" indication.

All tracks on the currently selected CD are played in random order. After each track has been played once, shuffle play will continue with the next CD.

Playing each track on each CD in the currently selected CD changer randomly
— CD changer shuffle play

Press the SHUF (3) button during CD playback to get the "SHUF 2" indication.

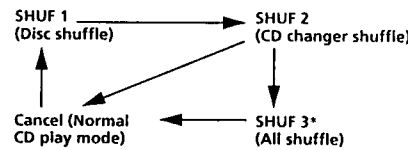
All tracks on each CD in the currently selected CD changer are played in random order.

Playing each track on each CD in all connected CD changers randomly
— All shuffle play (when two or more CD changers are connected)

Press the SHUF (3) button during CD playback to get the "SHUF 3" indication.

All tracks on each CD in each CD changer connected are played in random order.

The function of the SHUF (3) button changes cyclically as follows:



** The all-shuffle (SHUF 3) mode functions only when two or more changers are connected to the unit. When only one changer is connected, "SHUF 3" indication will not be displayed. In case you press the SHUF (3) button again while "SHUF 2" is displayed, the shuffle play will be canceled.*

If you press the INTRO (1) button during shuffle play, the first 10 seconds of all tracks will be played randomly.

Connections

Caution

- This unit is designed for negative ground 12 V DC operation only.
- Before making connections, disconnect the ground terminal of the car battery to avoid short circuits.
- Connect the yellow and red power input leads only after all other leads have been connected.
- Be sure to connect the red power input lead to the positive 12 V power terminal which is energized when the ignition key is in the accessory position.
- Run all ground wires to a common ground point.

When the Unit is Used in a Car with No Accessory Position on the Ignition Key — POWER SELECT Switch

The illumination on the front panel is factory-set to be turned on even when the unit is not being played. However, this setting may cause some car battery wear if the unit is used in a car with no accessory position on the ignition key. To avoid this battery wear when using the unit in such a car, set the POWER SELECT switch located on the bottom of the unit to the OFF position, then press the reset button. The illumination is reset to stay off while the unit is not being played.

Note

The caution alarm for the front panel is not activated when the POWER SELECT switch is set to the OFF position.

Reset Button

When the installation and connections are over, be sure to press the reset button with a ball-point pen etc.

Connexions

Précautions

- Cet appareil est conçu pour fonctionner sur courant continu de 12 V avec masse négative.
- Avant d'effectuer les connexions, débrancher la borne de terre de la batterie du véhicule pour éviter tout court-circuit.
- Brancher les fils d'entrée d'alimentation jaune et rouge seulement après avoir terminé tous les autres branchements.
- Veiller à ne pas raccorder le fil rouge d'entrée d'alimentation à la borne positive de 12 V qui est alimentée quand la clé de contact est sur la position accessoire.
- Rassembler tous les fils de terre en un point de masse commun.

Si l'appareil est utilisé dans une voiture dont la clé de contact n'a pas de position accessoire — Interrupteur POWER SELECT

L'éclairage du panneau avant est réglé en usine de manière à s'allumer même quand l'appareil ne fonctionne pas. Cependant, ce réglage risque d'épuiser la batterie si l'appareil est utilisé dans une voiture dont la clé de contact ne possède pas de position accessoire. Pour éviter d'épuiser la batterie, régler l'interrupteur POWER sur le socle de l'appareil sur OFF, puis appuyer sur la touche de réinitialisation. L'éclairage est réglé pour rester éteint quand l'appareil n'est pas utilisé.

Remarque

Quand l'interrupteur POWER SELECT est réglé sur OFF, l'avertisseur du panneau avant ne fonctionne pas.

Touche de réinitialisation

Quand l'installation et les connexions sont terminées, appuyer sur la touche de réinitialisation avec un stylo bille ou un objet pointu.

Anschluß

Vorsicht

- Dieses Gerät ist ausschließlich für eine negativ geerdete 12-V-Autobatterie bestimmt.
- Trennen Sie vor dem Anschließen des Geräts die Erdungsklemme der Batterie ab, um einen Kurzschluß zu vermeiden.
- Schließen Sie das gelbe und rote Stromversorgungskabel erst an, wenn alle anderen Kabel bereits angeschlossen sind.
- Leiten Sie das rote Stromversorgungskabel an einen positiven 12-V-Kontakt, an dem Spannung anliegt, wenn sich das Zündschloß in der Position I bzw. ACC (Position vor der Zündposition) befindet.
- Schließen Sie alle Erdungskabel an einen gemeinsamen Massepunkt an.

Wenn das Zündschloß Ihres Wagens keine Position I bzw. ACC besitzt — POWER SELECT-Schalter

Das Gerät ist werkseitig so voreingestellt, daß das Bedienungspult auch dann beleuchtet ist, wenn das Gerät nicht betrieben wird. Besitzt das Zündschloß Ihres Fahrzeugs keine Position I bzw. ACC, so ist die Beleuchtung ständig eingeschaltet und entzieht der Batterie Strom. Stellen Sie in einem solchen Fall den POWER SELECT-Schalter an der Unterseite des Geräts auf OFF, und drücken Sie dann die Rücksetztaste. Bei ausgeschaltetem Gerät ist das Bedienungspult dann nicht mehr beleuchtet.

Hinweis

Der Warnton für die Frontplatte ertönt nicht, wenn der POWER SELECT-Schalter auf OFF gestellt ist.

Rücksetztaste

Nach der Installation und dem Anschluß muß die Rücksetztaste mit einem Kugelschreiber o.ä. gedrückt werden.

Collegamenti

Attenzione

- Questo apparecchio è stato progettato per l'uso solo a 12 V CC con massa negativa.
- Prima di eseguire i collegamenti, scollegare il terminale di massa della batteria dell'auto per evitare cortocircuiti.
- Collegare i cavi del collegamento alimentazione rosso e giallo solo dopo aver collegato tutti gli altri cavi.
- Assicurarsi di collegare il cavo rosso di collegamento alimentazione al terminale di alimentazione 12 V positivo che è sotto tensione quando la chiavetta di accensione è in posizione accessoria.
- Portare tutti i cavi di massa a un punto di massa comune.

Quando si usa l'apparecchio in un'auto priva di posizione accessoria per la chiavetta di accensione — Interruttore POWER SELECT

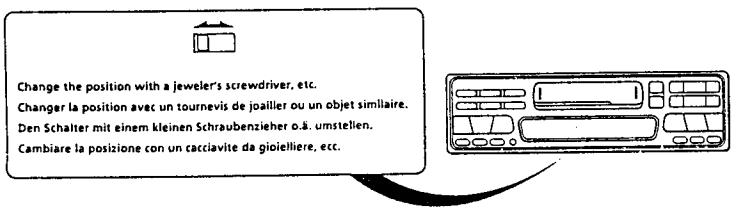
L'illuminazione del pannello anteriore è stata predisposta in fabbrica per l'attivazione anche quando non si usa l'apparecchio. Tuttavia questa regolazione può causare scaricamento della batteria dell'auto se si usa l'apparecchio in un'auto priva di posizione accessoria per la chiavetta di accensione. Per evitare lo scaricamento della batteria quando si usa l'apparecchio in questo tipo di auto, regolare su OFF l'interruttore POWER SELECT situato sul fondo e quindi premere il pulsante di azzeramento. L'illuminazione viene così regolata per lo spegnimento quando non si usa l'apparecchio.

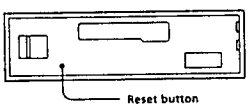
Nota

La sinuerie di avvertimento per il pannello anteriore non si attiva quando l'interruttore POWER SELECT è regolato sulla posizione OFF.

Pulsante di azzeramento

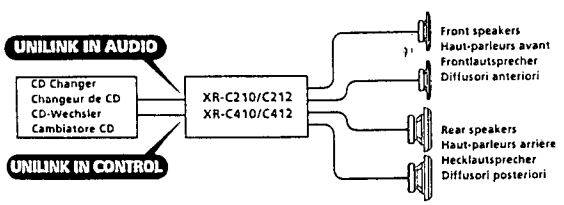
Dopo avere terminato l'installazione e i collegamenti, assicurarsi di premere il pulsante di azzeramento con la punta di una penna a sfera ecc.


Change the position with a jeweler's screwdriver, etc.
Changer la position avec un tournevis de joaillier ou un objet simliaire.
Den Schalter mit einem kleinen Schraubenzieher o.ä. umstellen.
Cambiare la posizione con un cacciavite da gioielliere, ecc.

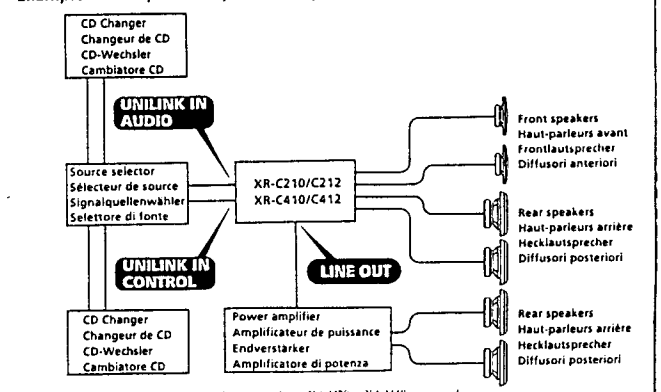


Connection Diagram — Schémas de connexion — Anschlußdiagramm — Schema di collegamento

Example 1/Exemple 1/Beispiel 1/Esempio 1

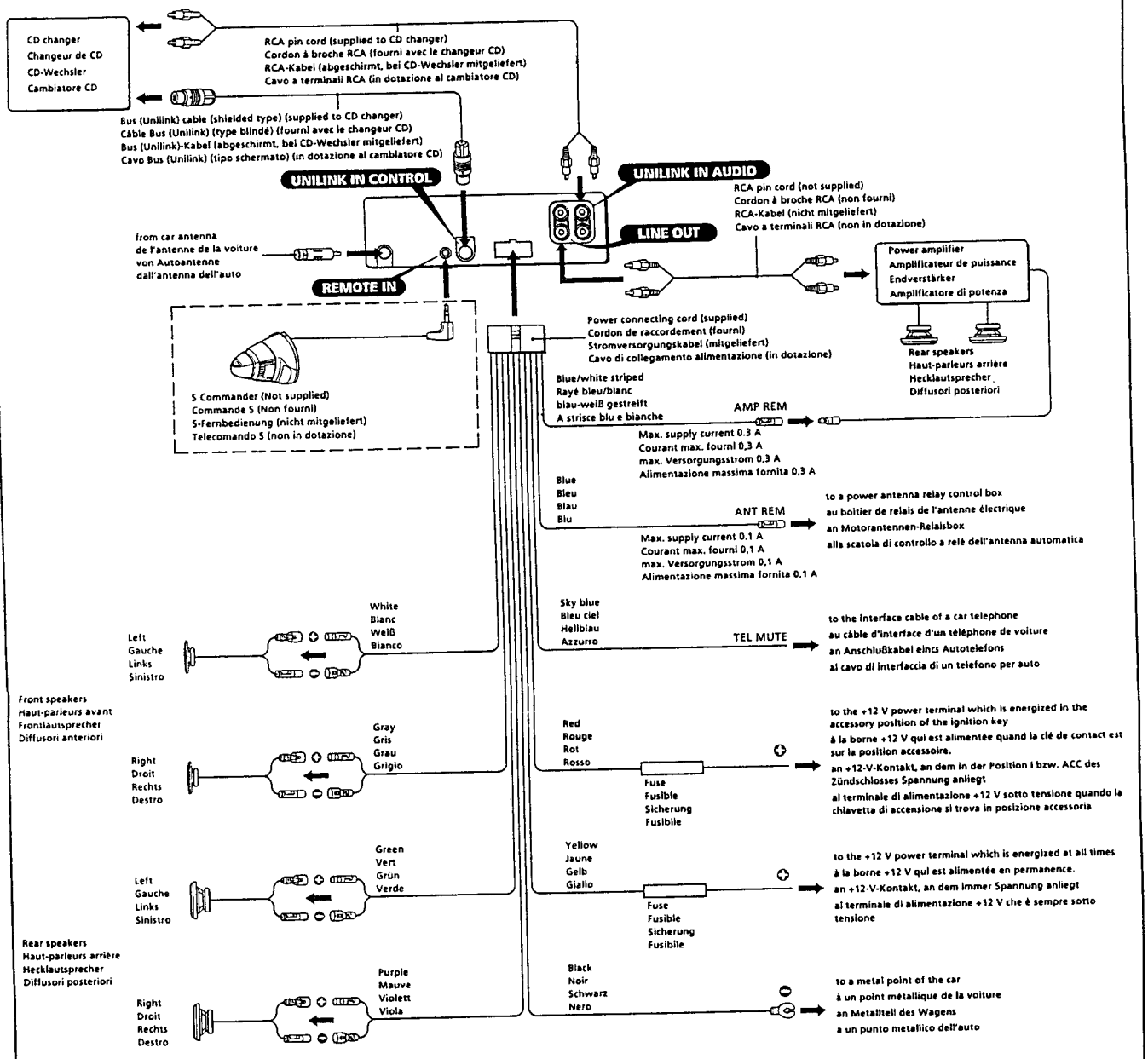


Example 2/Exemple 2/Beispiel 2/Esempio 2



If you connect two or more CD changers, the source selector XA-U20 or XA-U40 is required.
Vous devrez utiliser le sélecteur de source XA-U20 ou XA-U40, si vous raccordez au moins deux changeurs.
Bei Anschluß von zwei oder mehr CD-Wechslern wird der Signalquellenwähler XA-U20 oder XA-U40 benötigt.
Se si collegano due o più cambiatori CD, è necessario il selettore di fonte XA-U20 o XA-U40.

Connections of Example — Connexions de l'exemple — Anschlußbeispiel — Collegamenti per l'esempio



Notes on the control leads

- *The power antenna control lead (blue) supplies +12 V DC when you turn on the tuner or when you activate the ATA (Automatic Tuner Activation) function.*
- *A power antenna without relay box cannot be used with this unit.*

Memory hold connection

When the yellow power input lead is connected, power will always be supplied to the memory circuit even when the ignition key is turned off.

Notes on speaker connection

- *Before connecting the speakers, turn the unit off.*
- *Use speakers with an impedance of 4 to 8 ohms, and with adequate power handling capacities. Otherwise, the speakers may be damaged.*
- *Do not connect the terminals of the speaker system to the car chassis, and do not connect the terminals of the right speaker with those of the left speaker.*
- *Do not attempt to connect the speakers in parallel.*
- *Do not connect any active speakers (with built-in amplifiers) to the speaker terminals of the unit. Doing so may damage the active speakers. Therefore, be sure to connect passive speakers to these terminals.*

Remarques sur les fils de contrôle

- *Le fil de contrôle de l'antenne électrique (bleu) fournit du courant continu de +12 V quand le tuner est mis sous tension ou quand la fonction ATA (Automatic Tuner Activation) est activée.*
- *Une antenne électrique sans boîtier de relais ne peut pas être utilisée avec cet appareil.*

Connexion pour la conservation de la mémoire

Lorsque le fil d'entrée d'alimentation jaune est connecté, le circuit de la mémoire est alimenté en permanence même si la clé de contact est sur la position d'arrêt.

Remarques sur la connexion des haut-parleurs

- *Avant de raccorder les haut-parleurs, mettre l'appareil hors tension.*
- *Utiliser des haut-parleurs ayant une impédance de 4 à 8 ohms et une capacité adéquate sous peine de les endommager.*
- *Ne pas raccorder les bornes du système de haut-parleurs au châssis de la voiture et ne pas connecter les bornes du haut-parleur droit à celles du haut-parleur gauche.*
- *Ne pas tenter de raccorder les haut-parleurs en parallèle.*
- *Ne pas raccorder des haut-parleurs actifs (avec amplificateurs intégrés) aux bornes de haut-parleur de l'appareil sous peine de les endommager. Veiller à raccorder des haut-parleurs passifs à ces bornes.*

Hinweise zu den Steuerleitungen

- *Die Motorantennen-Steuerleitung (blau) gibt beim Einschalten des Tuners und beim Aktivieren der ATA-Funktion (Automatic Tuner Activation) +12 V Gleichspannung ab.*
- *Eine Motorantenne ohne Relaisbox kann nicht angeschlossen werden.*

Zur Stromversorgung des Speichers

Wenn das gelbe Stromversorgungskabel angeschlossen ist, wird der Speicher stets (auch bei ausgeschaltetem Zündschloß) mit Strom versorgt.

Hinweise zum Lautsprecheranschluß

- *Schalten Sie das Gerät aus, bevor Sie die Lautsprecher anschließen.*
- *Verwenden Sie Lautsprecher mit einer Impedanz zwischen 4 und 8 Ohm und ausreichender Belastbarkeit. Ansonsten können die Lautsprecher beschädigt werden.*
- *Verbinden Sie die Lautsprecheranschlüsse nicht mit dem Wagenchassis, und verbinden Sie auch nicht die Anschlüsse des rechten mit denen des linken Lautsprechers.*
- *Versuchen Sie nicht, Lautsprecher parallel anzuschließen.*
- *An die Lautsprecheranschlüsse dieses Geräts dürfen nur Passivlautsprecher angeschlossen werden. Schließen Sie keine Aktivlautsprecher (Lautsprecher mit eingebauten Verstärkern) an, da diese sonst beschädigt werden können.*

Nota sui cavi di collegamento

- *Il cavo di controllo dell'antenna automatica (blu) fornisce +12 V CC quando si accende il sintonizzatore o quando si attiva la funzione ATA (Automatic Tuner Activation).*
- *Non è possibile usare un'antenna automatica senza la scatola a relè con questo apparecchio.*

Collegamento per la conservazione della memoria

Quando il cavo di ingresso alimentazione giallo è collegato, viene sempre fornita alimentazione al circuito di memoria anche quando la chiavetta di accensione è spenta.

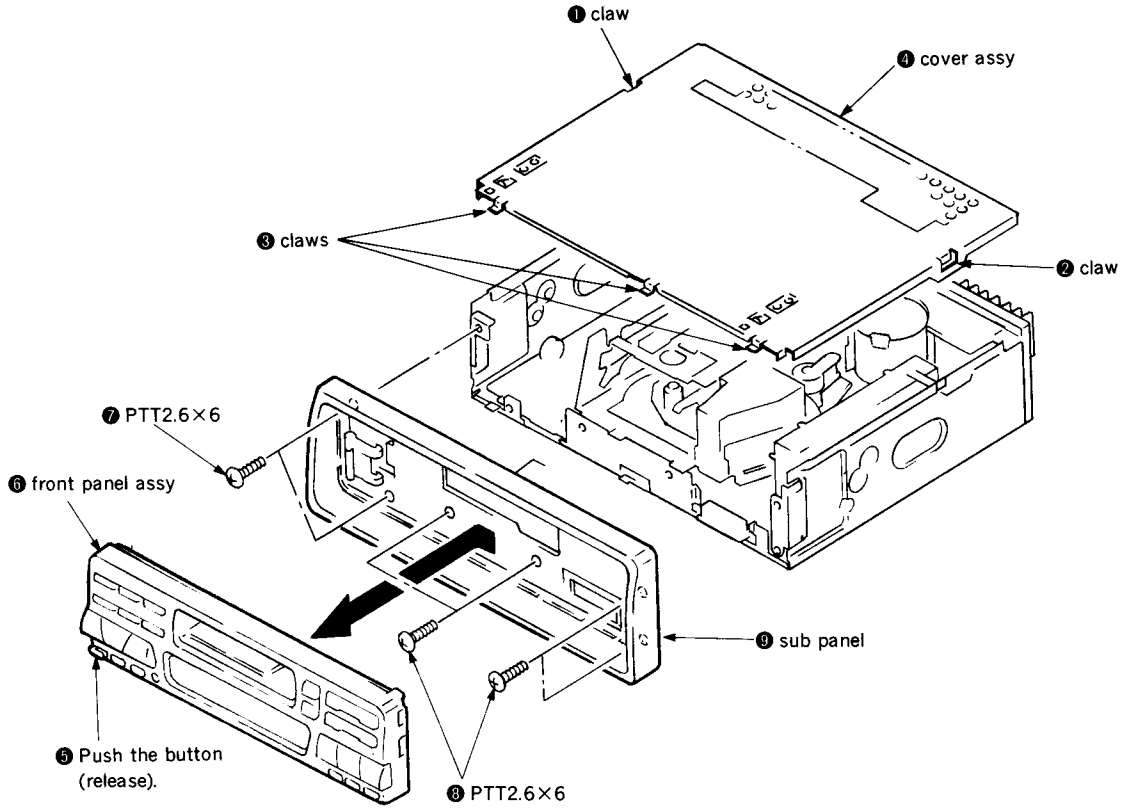
Note sul collegamento dei diffusori

- *Prima di collegare i diffusori spegnere l'apparecchio.*
- *Usare diffusori di impedenza compresa tra 4 e 8 ohm e con capacità di potenza adeguata, altrimenti i diffusori possono essere danneggiati.*
- *Non collegare i terminali del sistema diffusori al telaio dell'auto e non collegare i terminali del diffusore destro a quelli del diffusore sinistro.*
- *Non collegare i diffusori in parallelo.*
- *Non collegare alcun diffusore attivo (con amplificatore incorporato) ai terminali diffusori dell'apparecchio perché questo può danneggiare i diffusori attivi. Assicurarsi di collegare diffusori passivi a questi terminali.*

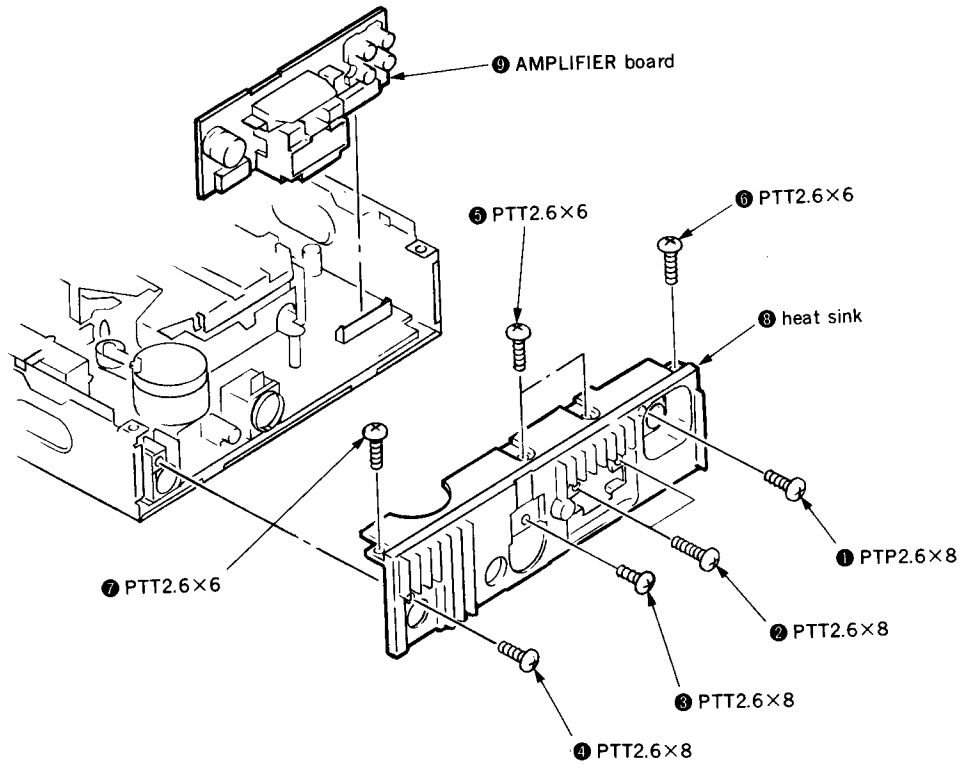
SECTION 2
DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

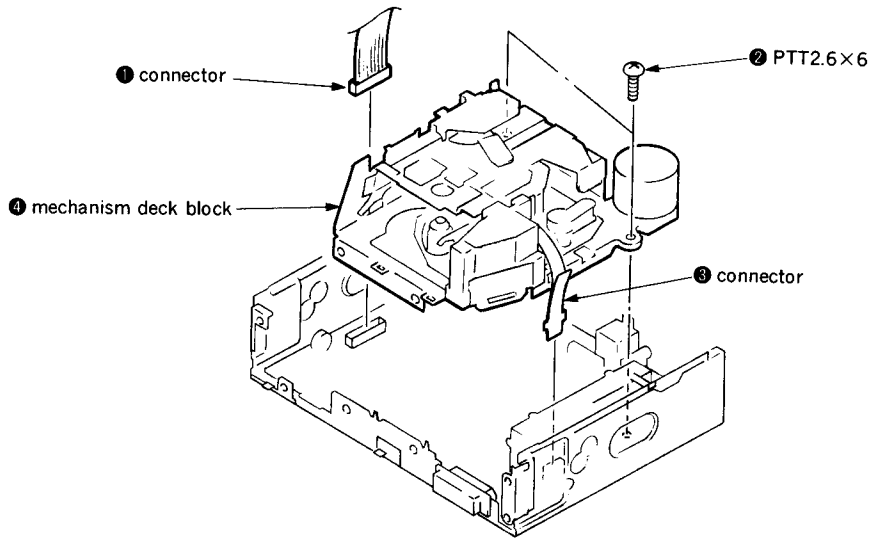
2-1. SUB PANEL



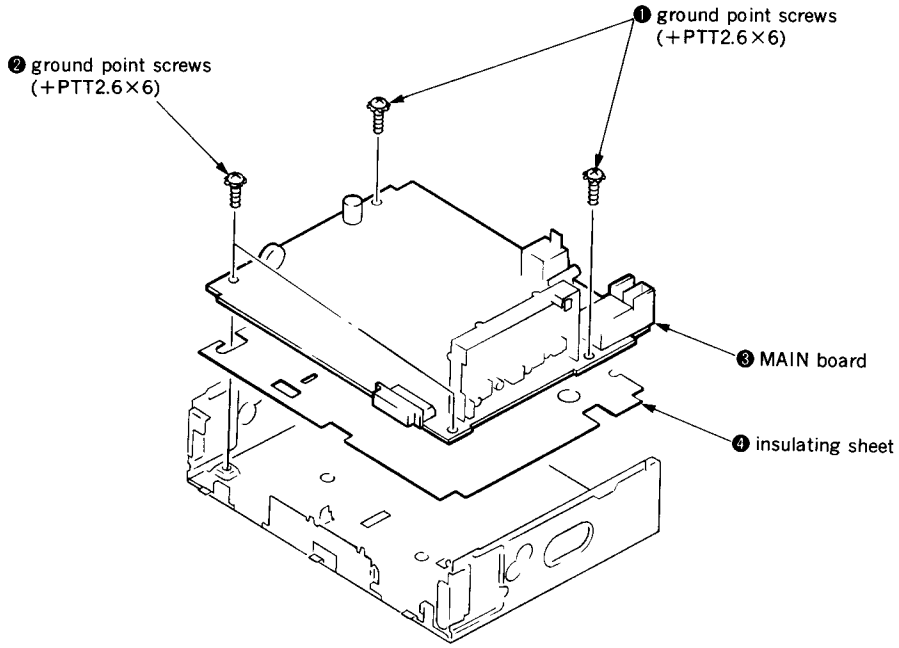
2-2. AMPLIFIER BOARD



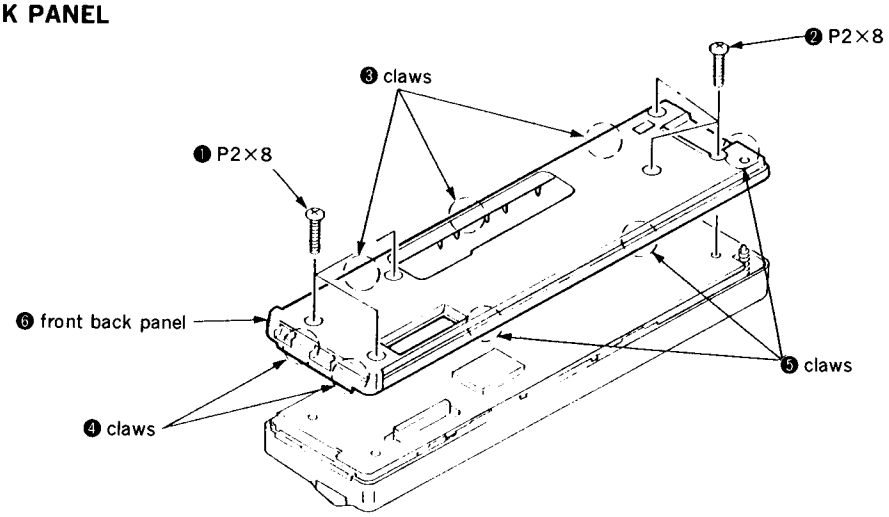
2-3. MECHANISM DECK BLOCK



2-4. MAIN BOARD



2-5. FRONT BACK PANEL



SECTION 3
MECHANICAL ADJUSTMENTS

PRECAUTION

1. Wipe the following components with an absorbent cotton cloth moistened with alcohol before adjustment :
   PB head　　Pinch roller
   Idler　　Rubber belt
   Capstan
2. Demagnetize the PB head using a head demagnetizer.
3. Be careful not to use a magnetized screwdriver.
4. After the adjustment is completed, lock the adjustment parts using screws.
5. Unless otherwise specified, make adjustments at the specified voltage (14.4V).

Torque Measurement

Mode	Torque Meter	Meter Reading
FWD	CQ-102C	30－65g•cm (0.42－0.90 oz•inch)
FWD Back Tension		0.5－4.5g•cm (0.01－0.06 oz•inch)
REV	CQ-102RC	30－65g•cm (0.42－0.90 oz•inch)
REV Back Tension		0.5－4.5g•cm (0.01－0.06 oz•inch)
FF, REW	CQ-201B	60－200g•cm (0.83－2.78 oz•inch)

Tape Tension Measurement

Mode	Tension Meter	Meter Reading
FWD	CQ-403A	more than 90g (more than 3.18 oz)
REV	CQ-403R	

SECTION 4
ELECTRICAL ADJUSTMENTS

TEST MODE

This set have the test mode function. In the test mode, FM Auto Scan/Stop Level and AM Auto Scan/Stop Level adjustments can be performed easier than it in ordinaly procedure.

〈Set the Test Mode〉

1. Set the "OFF" mode.
2. Push the preset [4] button.
3. Push the preset [5] button.
4. Press the preset [1] button for two seconds.
5. Then the display indicates five patterns and stops, the test mode is set.

〈Rerease the Test mode〉

1. Push the "OFF" button.

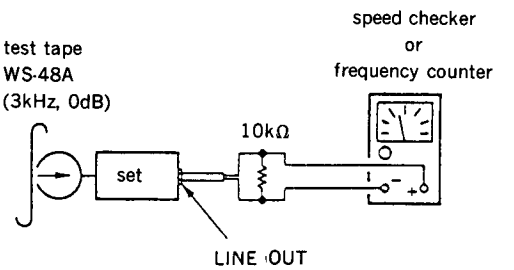
See the adjustment location from on page 14 for the adjustment.

DECK SECTION　**0dB=0.775V**

Tape Speed Adjustment

Procedure :

1. Put the set into the FWD PB mode.



Specification : Constant speed

Speed checker	Frequency counter
−1.5 to +2.5%	2,955 to 3,075Hz

Adjustment Location : See page 14.

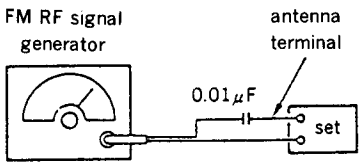
TUNER SECTION | **0dB=1μV**

Cautions during repair
When the front end is defective, replace it by a new one because its internal block is difficult to repair.

FM Auto Scan/Stop Level Adjustment

Setting :

FM button (C210) : FM
TUNER button (C212) : FM

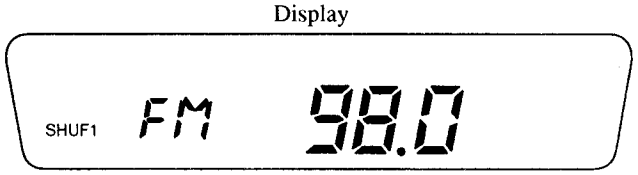


Carrier frequency : 98.0MHz
Output level : 22dB (12.6μV)
Mode : mono
Modulation : 1kHz, 75kHz deviation

Procedure :

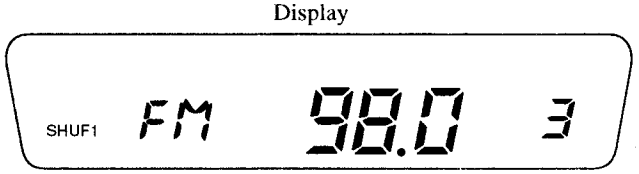
1. Set to the test mode. (See page 11.)
2. Push the [FM] button (C210) or [TUNER] button (C212) and set to FM.

Display



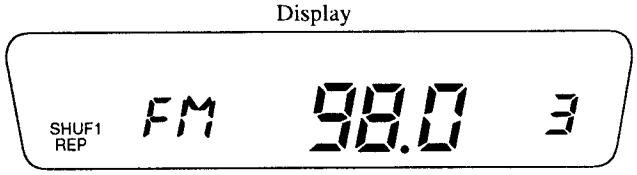
3. Push the preset [3] button.

Display



4. Adjust with the volume RV3 on TU10 so that put light "REP" indication on the display window.
   But, in case of already indicated "REP", turn the RV3 so that put out light "REP" indication and adjustment.

Display

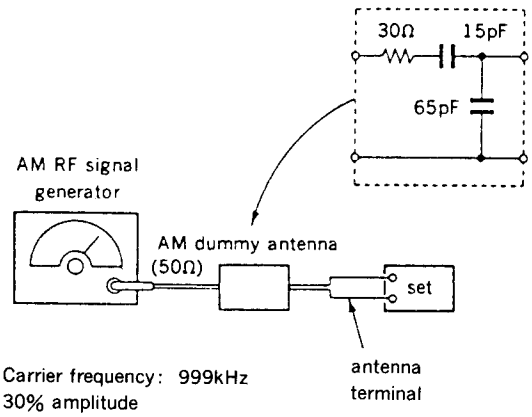


Adjustment Location : See page 14.

MW Auto Scan/Stop Level Adjustment

Setting :

MW/LW button (C210) : MW
TUNER button (C212) : MW

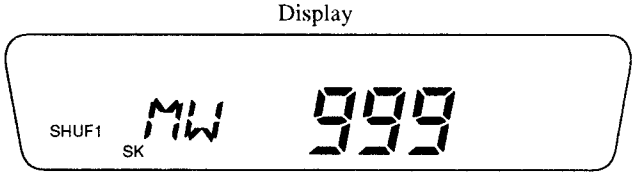


Carrier frequency : 999kHz
30% amplitude modulation by 400Hz signal
Output level : 33dB (44.7μV)

Procedure :

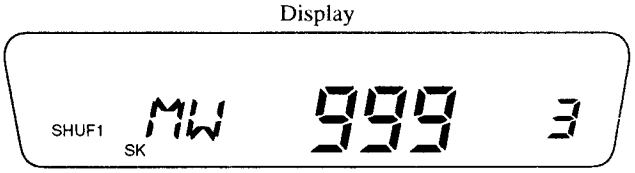
1. Set to the test mode. (See page 11.)
2. Push the [MW/LW] button (C210) or [TUNER] button (C212) and set to MW.

Display



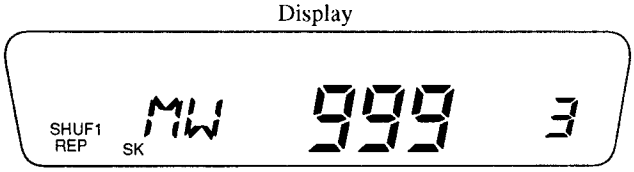
3. Push the preset [3] button.

Display



4. Adjust with the volume RV1 on TU10 so that put light "REP" indication on the display window.
   But, in case of already indicated "REP", turn the RV1 so that put out light "REP" indication and adjustment.

Display

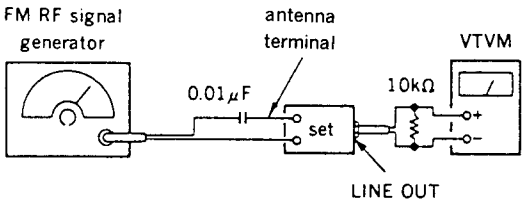


Adjustment Location : See page 14.

High Cut Control Effect Adjustment

Setting :

FM button (C210) : FM
TUNER button (C212) : FM



Carrier frequency : 98.0MHz
Output level : 60dB (1mV)
Mode : mono
Modulation : 1kHz, 40kHz deviation

Procedure :

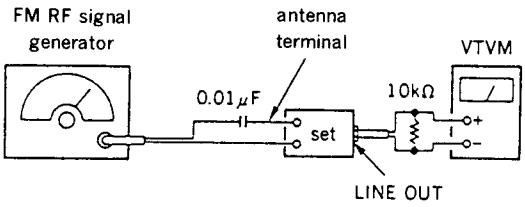
1. Tune the 98.0MHz.
2. The then output level is supposing that (A) dB.
3. Adjust with the volume RV2 on TU10 so that the output level is (A)−5dB then signal generator input set to 20dB.

Adjustment Location : See page 14.

FM Noise Focus Adjustment

Setting :

FM button (C210) : FM
TUNER button (C212) : FM



Carrier frequency : 98.0MHz
Output level : 60dB (1mV)
Mode : mono
Modulation : 10kHz, 75kHz deviation

Procedure :

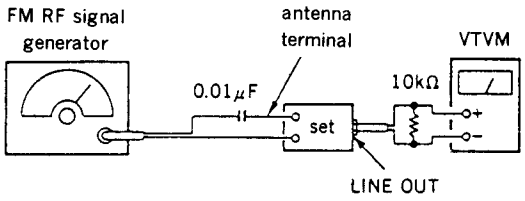
1. Tune the 98.0MHz.
2. The then output level is supposing that (B) dB.
3. Adjust with the volume RV5 on TU10 so that the output level is (B)−30dB then signal generator input set to −20dB.

Adjustment Location : See page 14.

FM Stereo Separation Adjustment

Setting :

FM button (C210) : FM
TUNER button (C212) : FM



Carrier frequency : 98.0MHz
Output level : 70dB (3.2mV)
Mode : stereo
Modulation : main : 1kHz, 20kHz deviation (53%)
sub : 1kHz, 20kHz deviation (53%)
19kHz pilot : 7.5kHz deviation (10%)

Procedure :

FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV4 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV4 for minimum reading.

L-CH Stereo separation : Ⓐ−Ⓑ
R-CH Stereo separation : Ⓒ−Ⓓ
The separations of both channels should be equal.

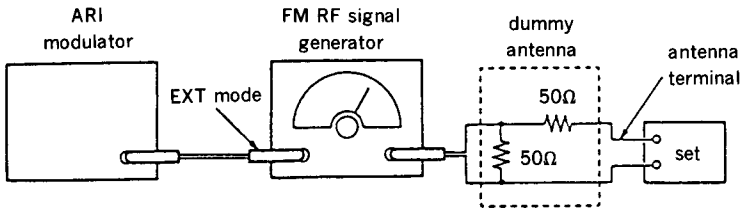
Specification : Separation more than 30dB

Adjustment Location : See page 14.

SDK Adjustment (XR-C212 only)

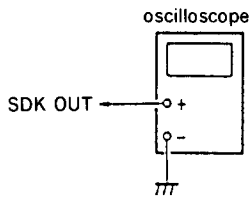
Setting :

SDK (Traffic Announcement) button : ON



ARI modulation
SK : 1.5%
DK : 30%
BK : 60%

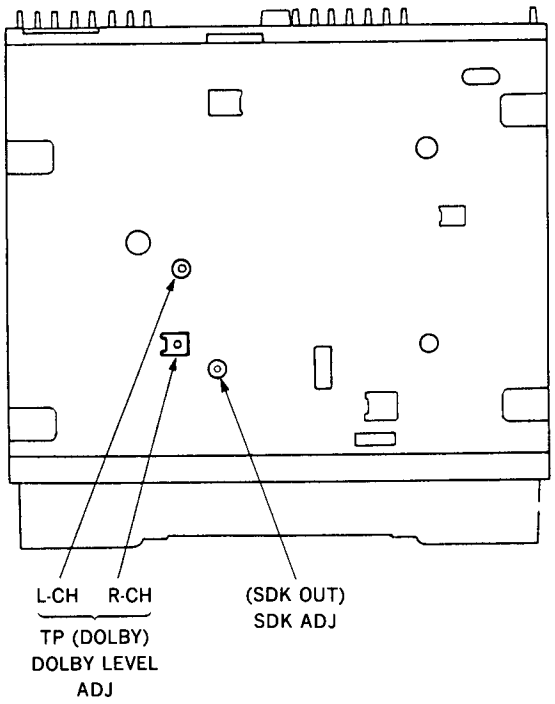
Carrier frequency : 98.0MHz
Output level : 60dB (1mV)
Mode : mono
Modulation : 1kHz, 7.5kHz deviation



Procedure :

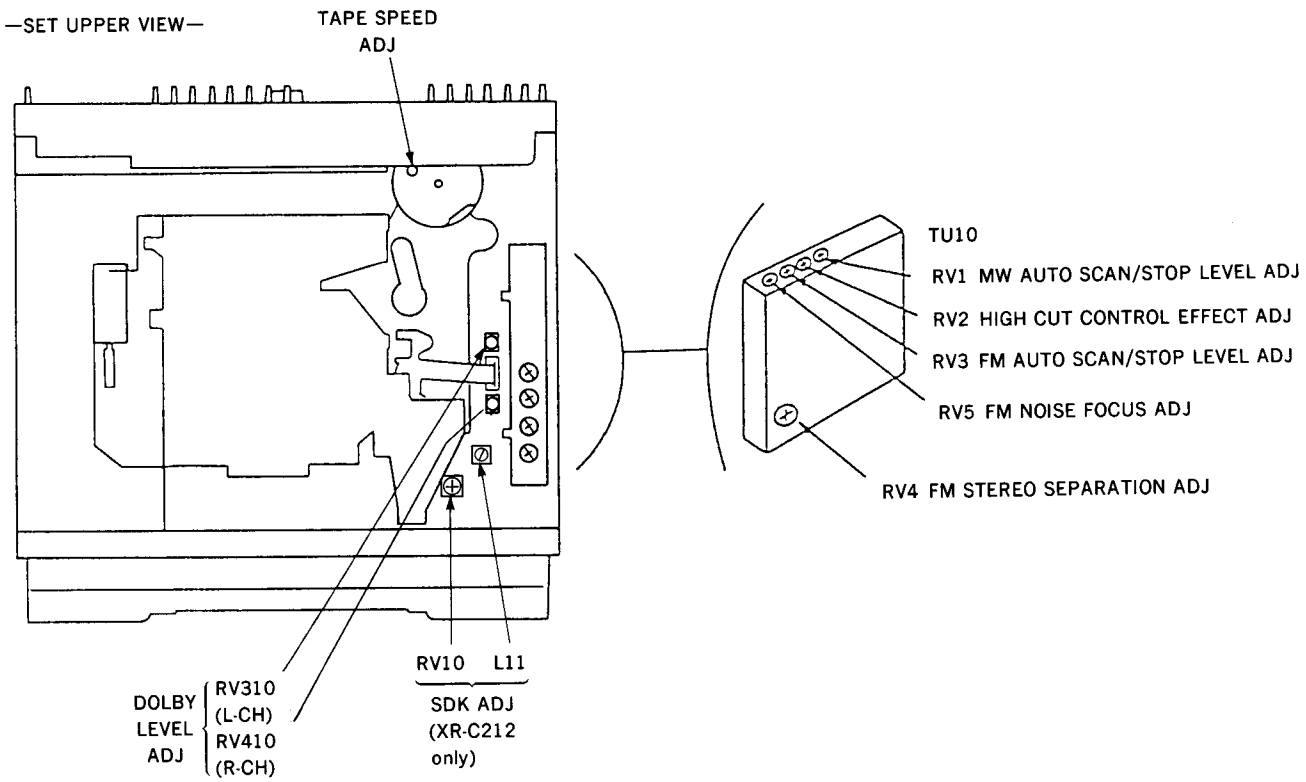
1. Adjust L11 and RV10 so that the output waveform become the maximum.

—SET LOWER VIEW—



Adjustment Location :

—SET UPPER VIEW—



SECTION 5
DIAGRAMS

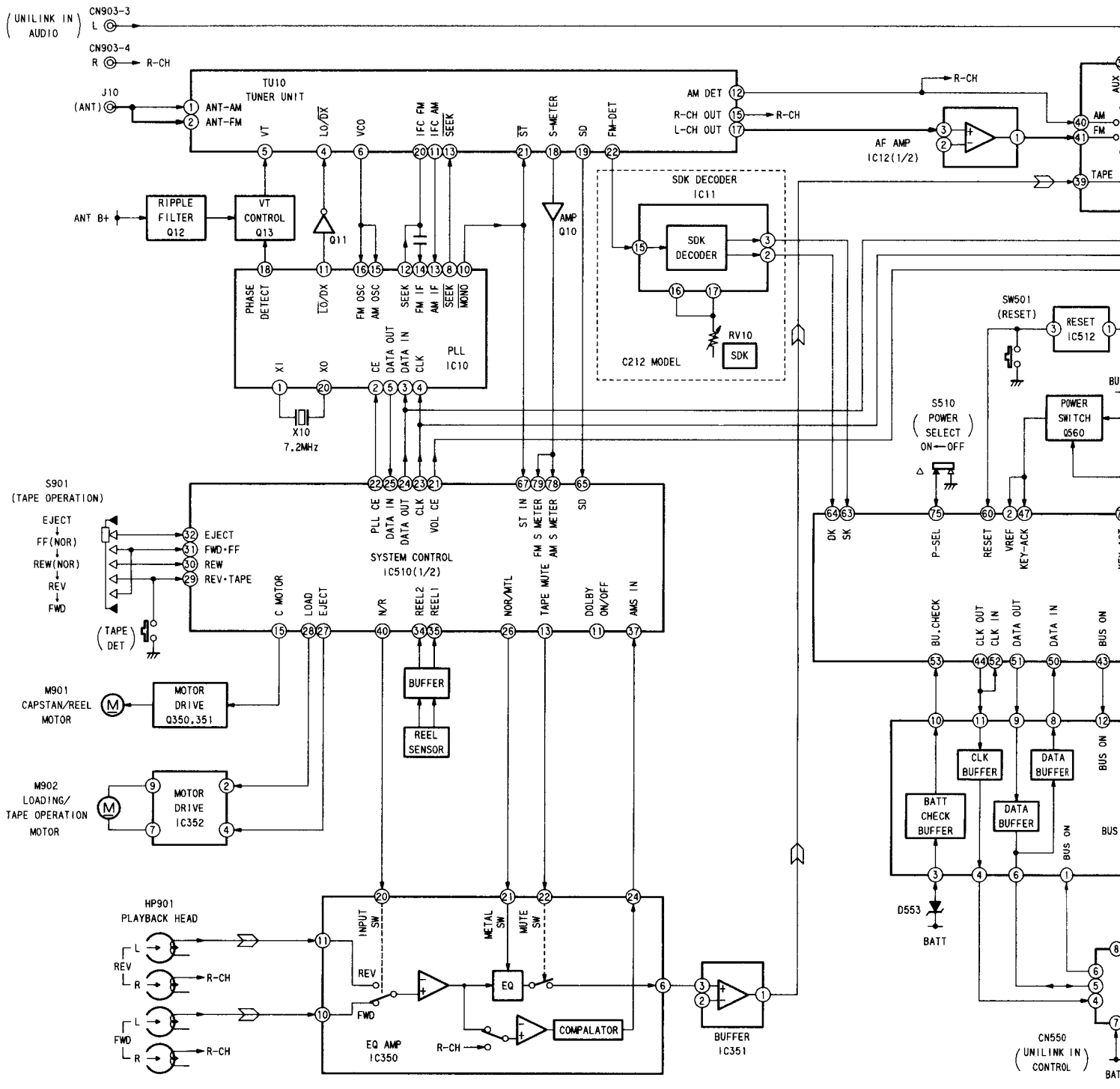
5-1. IC PIN DESCRIPTION

• IC510 μPD75518GF-219-3B9 (System Control)

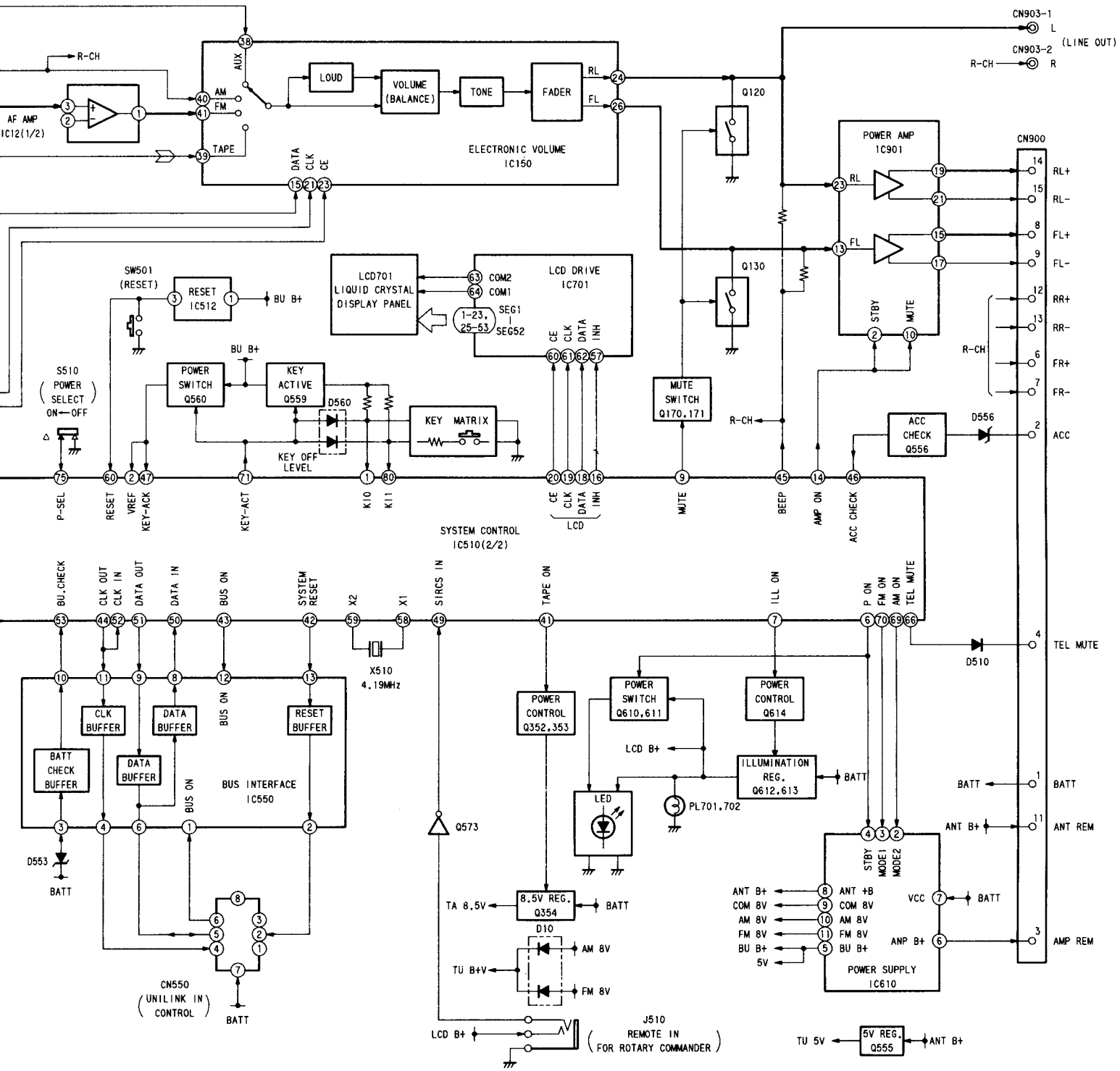
Pin No.	Pin Name	I/O	Pin Description
1	KI0	I	KEY input
2	VREF	I	A/D reference voltage input
3, 4	VDD	—	Power supply terminal
5	N. C	—	No connection
6	P-ON	O	At P-ON : High output
7	ILL-ON	O	At ACC-ON : High output (P-SEL : ON) At P-ON : High output (P-SEL : OFF)
8	COLOR	—	No used.
9	MUTE	O	At MUTE : High output
10	AUX-MUTE	—	No used.
11	DOLBY-ON/OFF	—	Not used.
12	TUNER-MUTE	—	Not used.
13	TAPE-MUTE	O	Except for TAPE PLAYBACK : High output (At movement on FF, REW and AMS : Low output)
14	AMP-ON	O	Inner power amplifier control terminal. At AMP-ON : High output
15	C-MOTOR	O	Capstan motor control terminal. At MOTOR-ON : High output
16	LCD-INH	O	INHIBIT signal to LCD driver IC. At Low output : Light off
17	TEST MODE	I	At Low input : TEST MODE 1. Input available at timing only of RESET L to H and BU CHECK L to H.
18	LCD-DATA	O	DATA output terminal to LCD driver IC.
19	LCD-CLK	O	CLOCK output terminal to LCD driver IC.
20	LCD-CE	O	LATCH output terminal to LCD driver IC.
21	VOL-CE	O	LATCH output terminal to VOL IC.
22	PLL-CE	O	LATCH output terminal to PLL IC.
23	VOL. PLL-CLK	O	CLOCK output terminal to VOL and PLL IC.
24	VOL. PLL-DATA	O	DATA output terminal to VOL and PLL IC.
25	PLL DATA IN	I	DATA input terminal from PLL IC.
26	NOR/MTL	I/O	At AUTO METAL : METAL input terminal. At METAL : Low input, at NORMAL : High input. At no AUTO METAL : METAL output terminal. At METAL : High output, at NORMAL : Low input.
27	EJECT	O	LOADING MOTOR control terminal. At moving in the direction of EJECT : High output.
28	LOAD	O	LOADING MOTOR control terminal. At moving in the direction of LOAD and PLAY.
29—32	POS4—POS1	I	MD position detection terminal
33	GND	—	GND
34	REEL2	I	MD reel table rotation detection terminal. FWD supply side
35	REEL1	I	MD reel table rotation detection terminal. FWD take-up side
36	AUT-MTL	—	Connect to GND.
37	AMS-IN	I	TAPE music with/without detection terminal. Low input : With music, High input : Without music
38	EEPROM-DATA	—	Connect to GND.
39	EEPROM-CLK	—	Not used.
40	N/R	O	NORMAL/$\overline{\text{REVERSE}}$ output terminal
41	TAPE-ON	O	OR output of LM•EJECT and LM•LOAD. At one side ACTIVE : High output, at REEL detection : High output
42	SYSTEM RESET	O	UNILINK $\overline{\text{SYSTEM RESET}}$ terminal. Low output : SYSTEM RESET

Pin No.	Pin Name	I/O	Pin Description
43	BUS-ON	O	For UNILINK terminal
44	CLK-OUT	O	For UNILINK terminal
45	BEEP	O	For piezoelectric buzzer output terminal
46	ACC-CHECK	I	Accessory detection terminal, Low input : ACC ON
47	KEY-ACK	I	KEY ACKNOWLEDGE input terminal. For KEY insert input
48	C-ALARM	I	Caution alarm with/without initial setting terminal. Low input : With caution alarm
49	SIRCS-IN	I	SIRCS (REM DET) input terminal
50	DATA-IN	I	For UNILINK terminal
51	DATA-OUT	O	For UNILINK terminal
52	CLK-IN	I	For UNILINK terminal
53	BU. CHECK	I	Back Up voltage detection terminal
54	VSS	—	GND
55	XT1	—	Connect to GND.
56	XT2	—	Not used.
57	IC	—	Connect to GND.
58	X1	—	Connect to crystal. (4.19MHz)
59	X2	—	Connect to crystal. (4.19MHz)
60	RESET	I	RESET input
61, 62	—	—	Connect to GND.
63	SK	I	High input : With SK
64	DK	I	High input : With DK
65	SD	I	High input : With SD
66	TEL-MUTE	I	Low input : 20dB audio mute
67	ST-IN	I	Low input : Stereo
68	N-SW	I	Low input : With front panel
69	AM-ON	O	At TUNER ON : High output
70	FM-ON	O	At FM (both playing and behind) : High output
71	KEY-ACT	O	Reverse pin ⑤ and Active output terminal
72	—	—	Not used.
73	A. GND	—	A/D GND
74	DOLBY-SEL	I	Connect to GND.
75	P-SEL	I	POWER SELECT switch input. High input : ON, Low input : OFF. (Low input : Setting without ACC position)
76	DEST1	I	Destination setting terminal
77	DEST0	I	Destination setting terminal
78	AM-S-METER	I	AM S meter input terminal
79	FM-S-METER	I	FM S meter input terminal
80	KI1	I	KEY input terminal

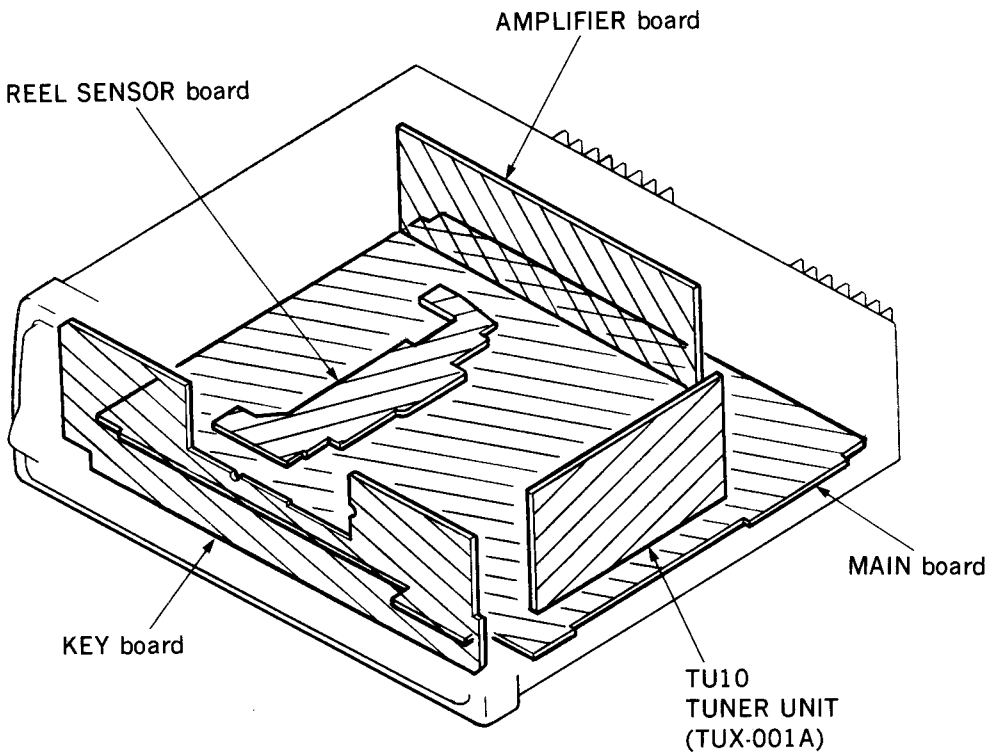
5-2. BLOCK DIAGRAM



04


CN903-1
L
(LINE OUT)
CN903-2
R
R-CH
AF AMP
IC12(1/2)
AUX
AM
FM
TAPE
LOUD
VOLUME
(BALANCE)
TONE
FADER
RL
FL
ELECTRONIC VOLUME
IC150
DATA
CLK
CE
Q120
Q130
POWER AMP
IC901
CN900
RL+
RL-
FL+
FL-
RR+
RR-
FR+
FR-
ACC
STBY
MUTE
SW501
(RESET)
RESET
IC512
BU B+
LCD701
LIQUID CRYSTAL
DISPLAY PANEL
LCD DRIVE
IC701
COM2
COM1
SEG1
SEG52
S510
POWER
SELECT
ON—OFF
POWER
SWITCH
Q560
KEY
ACTIVE
Q559
D560
KEY MATRIX
KEY OFF
LEVEL
MUTE
SWITCH
Q170,171
ACC
CHECK
Q556
D556
P-SEL
RESET
VREF
KEY-ACK
KEY-ACT
K10
K11
CE
CLK
DATA
INH
LCD
MUTE
BEEP
AMP ON
ACC CHECK
SYSTEM CONTROL
IC510(2/2)
BU.CHECK
CLK OUT
CLK IN
DATA OUT
DATA IN
BUS ON
SYSTEM
RESET
X2
X1
SIRCS IN
TAPE ON
ILL ON
P ON
FM ON
AM ON
TEL MUTE
TEL MUTE
D510
X510
4.19MHz
CLK
BUFFER
DATA
BUFFER
RESET
BUFFER
BATT
CHECK
BUFFER
DATA
BUFFER
BUS ON
BUS INTERFACE
IC550
D553
BATT
CN550
(UNILINK IN
CONTROL)
POWER
CONTROL
Q352,353
POWER
SWITCH
Q610,611
POWER
CONTROL
Q614
LCD B+
ILLUMINATION
REG.
Q612,613
BATT
LED
PL701,702
Q573
TA 8.5V
8.5V REG.
Q354
BATT
D10
AM 8V
TU B+V
FM 8V
LCD B+
J510
REMOTE IN
(FOR ROTARY COMMANDER)
ANT B+
COM 8V
AM 8V
FM 8V
BU B+
5V
ANT +B
COM 8V
AM 8V
FM 8V
BU B+
VCC
ANP B+
POWER SUPPLY
IC610
STBY
MODE1
MODE2
BATT
ANT REM
AMP REM
TU 5V
5V REG.
Q555
ANT B+

5-3. CIRCUIT BOARDS LOCATION



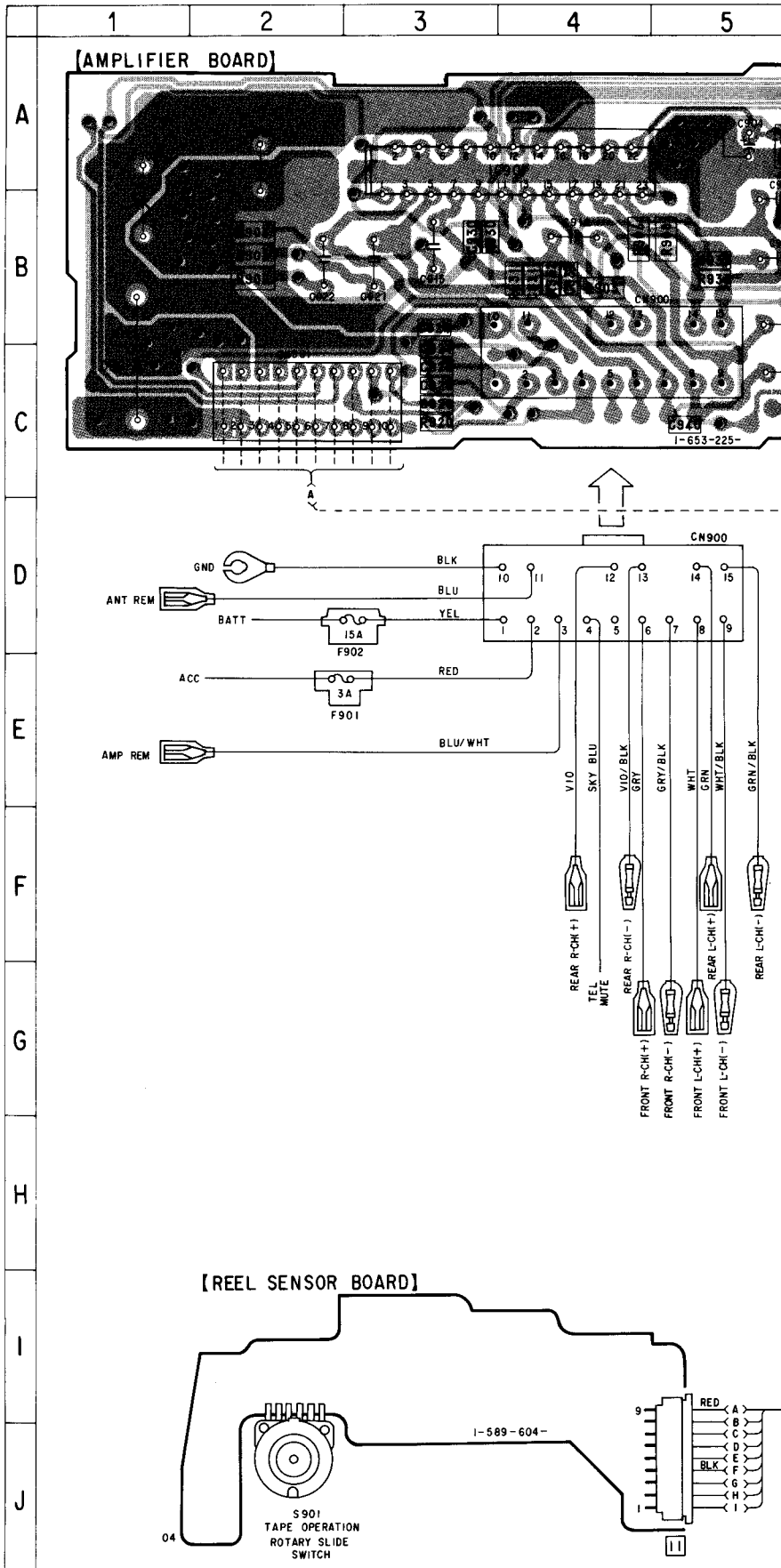
5-4. PRINTED WIRING BOARDS—MAIN SECTION— • Refer to page 35 fo

• Semiconductor Location

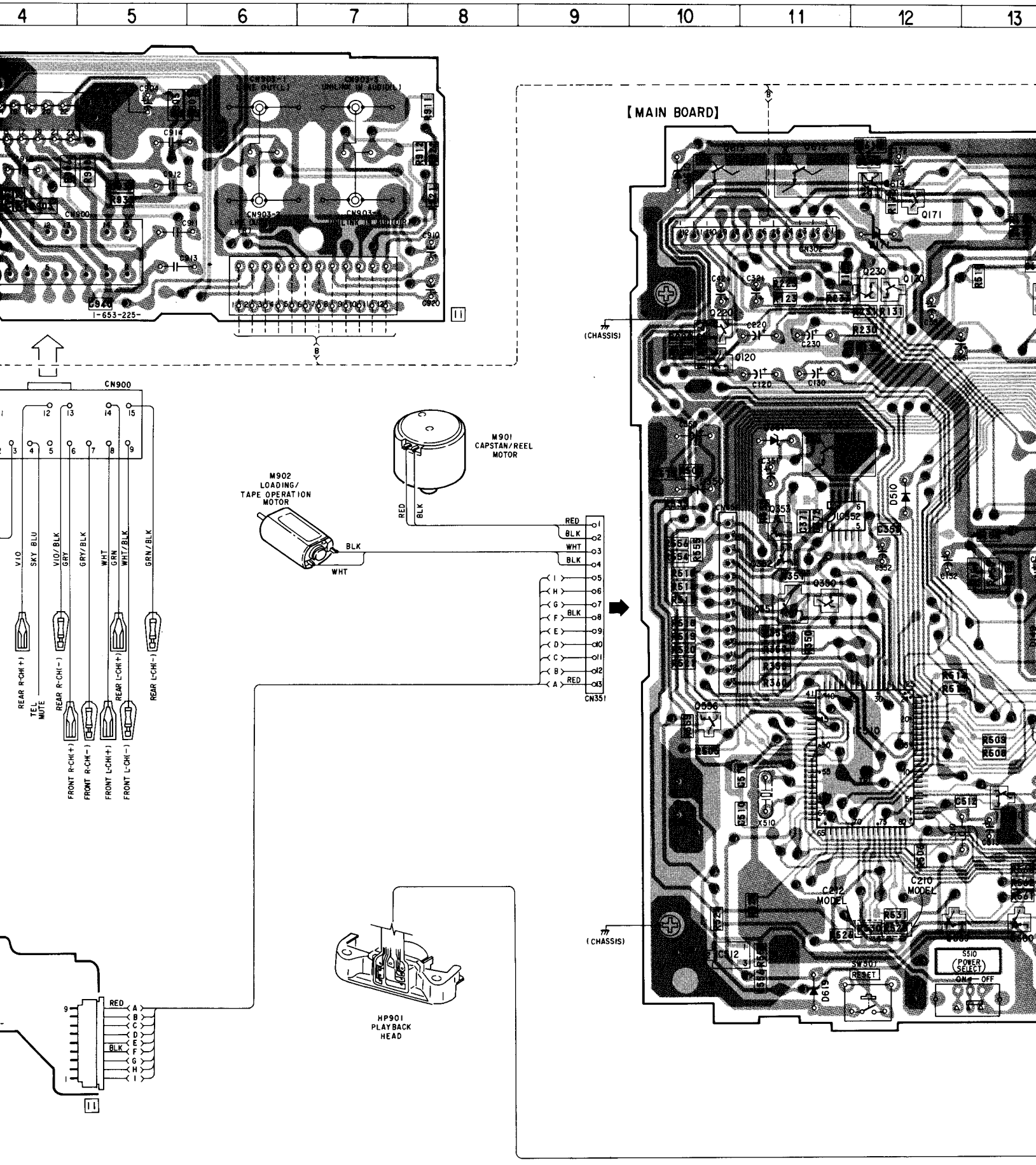
Ref. No.	Location	Ref. No.	Location
D10	C-18	IC150	E-14
D12	B-17	IC350	D-17
D14	H-16	IC351	F-16
D149	F-13	IC352	E-11
D170	B-15	IC510	G-11
D171	C-11	IC512	I-10
D350	E-10	IC550	D-16
D351	D-11	IC610	C-15
D352	E-16	IC901	A-3
D510	E-12		
D550	C-16	Q10	I-16
D551	C-16	Q11	E-18
D552	C-16	Q12	C-17
D553	D-17	Q13	D-18
D554	C-13	Q120	C-10
D556	C-13	Q130	C-12
D558	B-18	Q170	B-14
D560	I-13	Q171	C-11
D562	C-14	Q220	C-10
D563	C-14	Q230	C-12
D609	I-14	Q350	F-11
D610	B-10	Q351	F-11
D613	I-15	Q352	E-11
D614	I-15	Q353	E-11
D615	I-15	Q354	D-11
D616	I-15	Q555	B-18
D617	I-13	Q556	G-10
D618	I-13	Q559	I-12
D619	I-11	Q560	I-13
D620	B-14	Q573	B-17
D901	C-1	Q610	G-13
		Q611	H-14
IC10	E-17	Q612	B-11
IC11	H-17	Q613	B-10
IC12	G-15	Q614	C-11

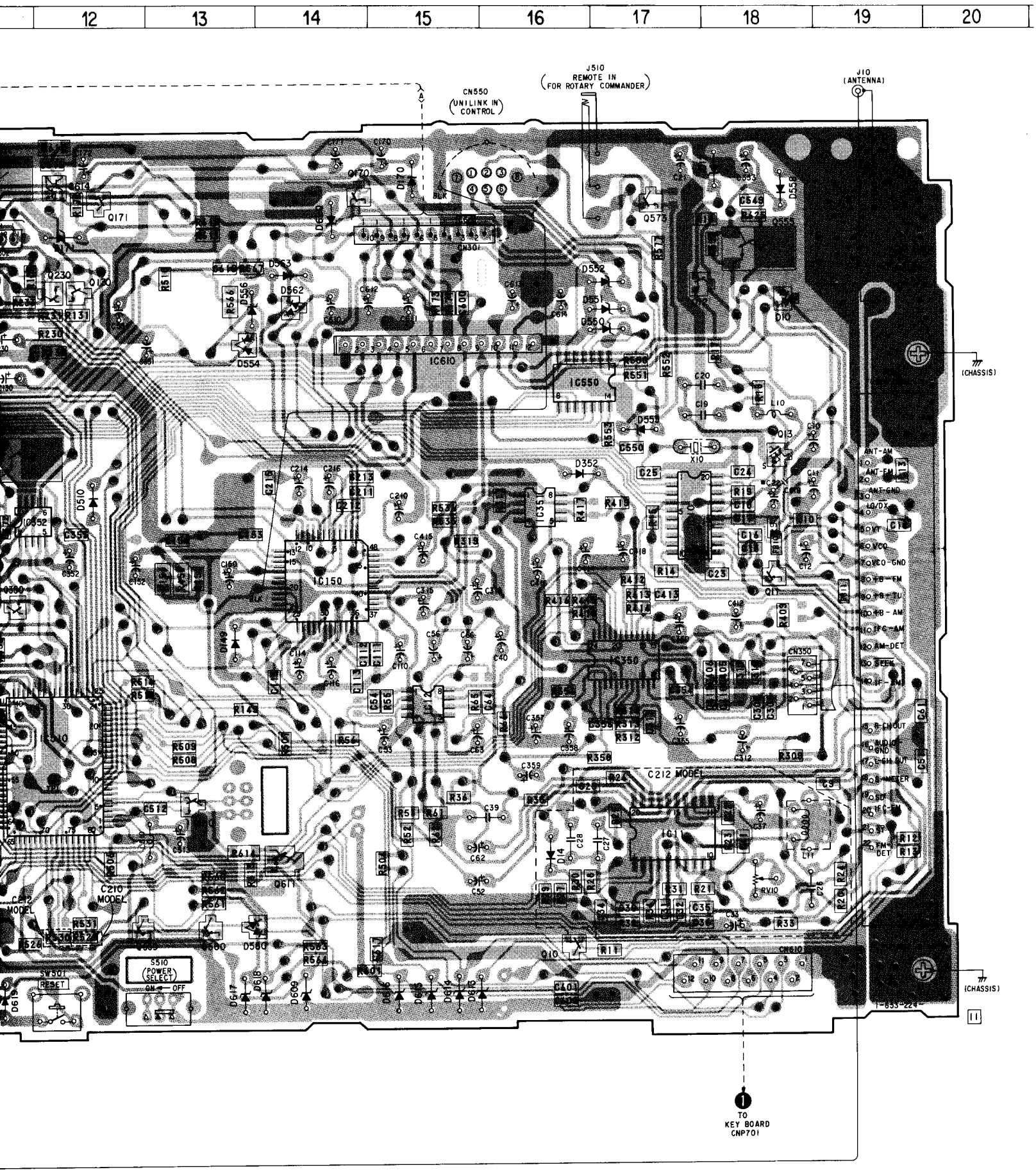
Note :

- ○— : parts extracted from the component side.
- ● : Through hole.
- ■ : parts mounted on the conductor side.
- ▨ : Pattern on the side which is seen.
- ▨ : Pattern on the rear side.

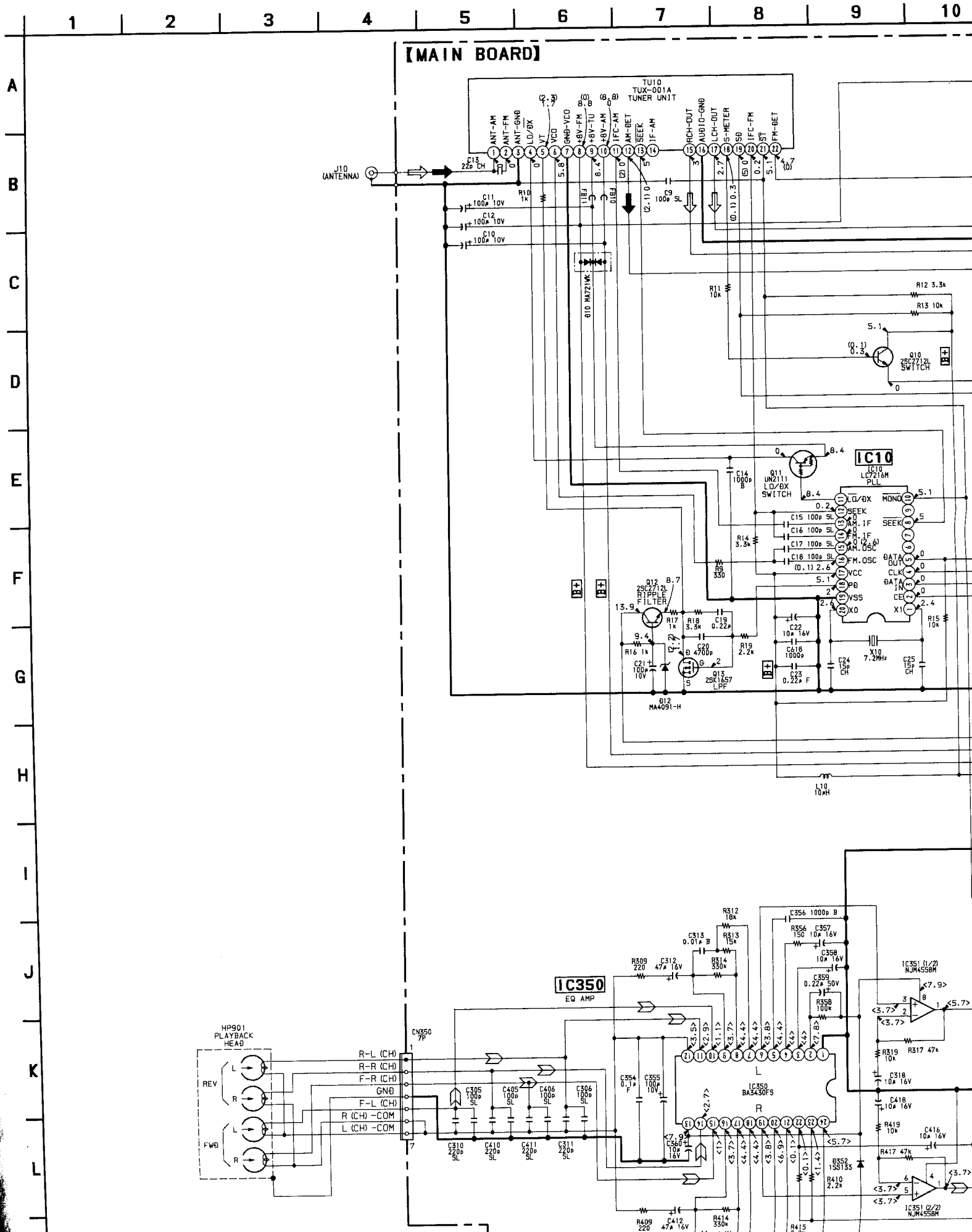


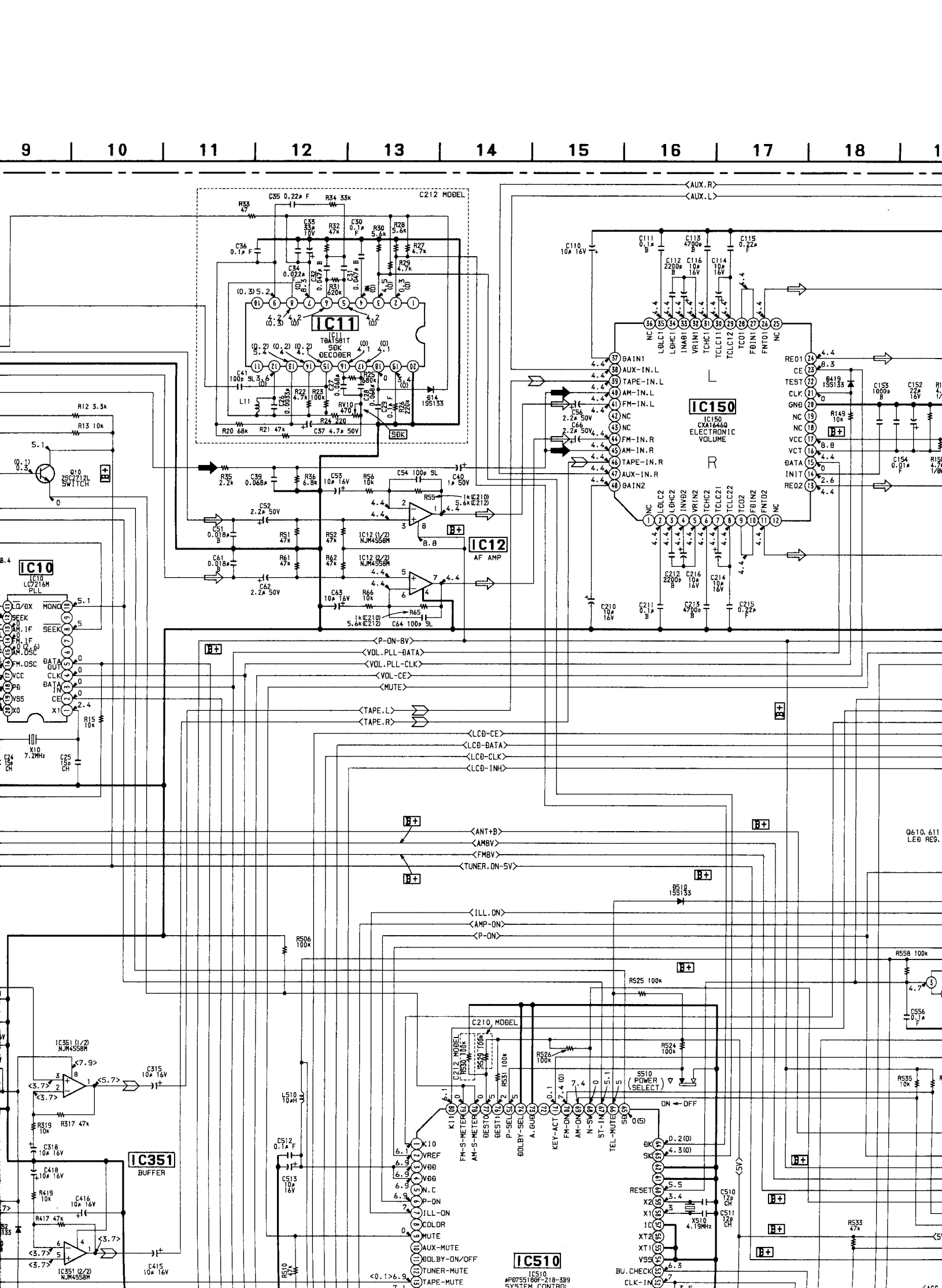
– • Refer to page 35 for Semiconductor Lead Layouts.

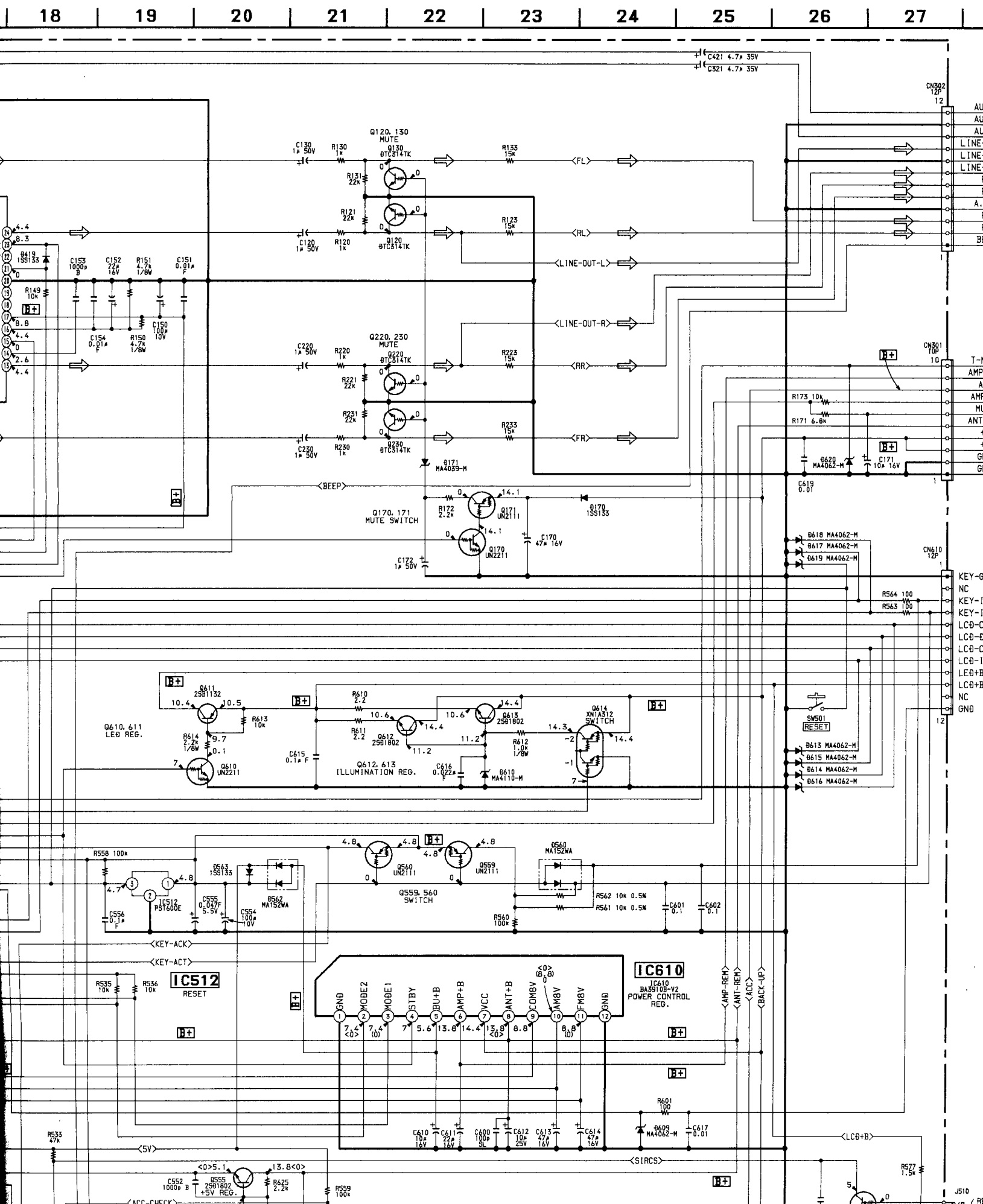


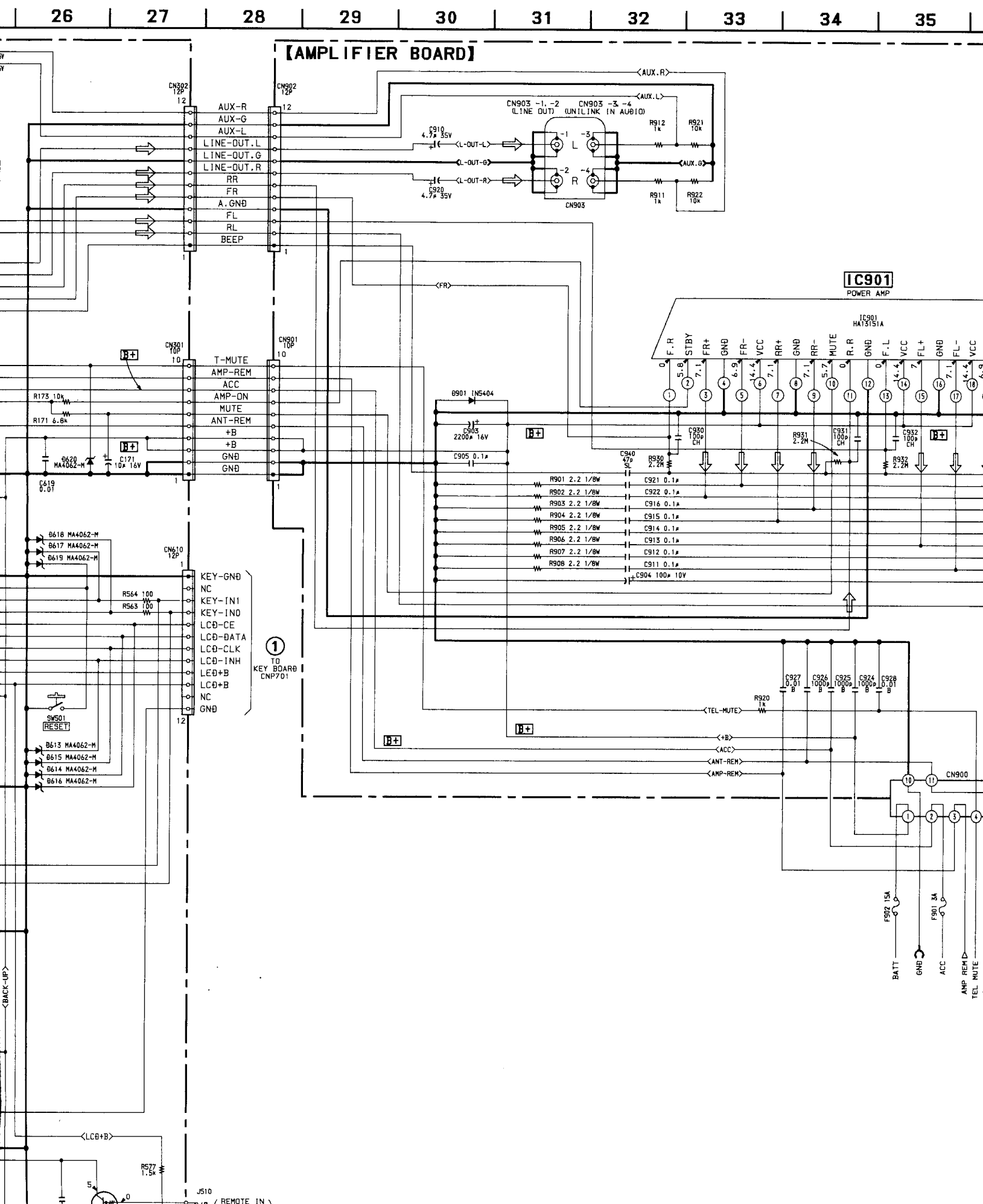

12
13
14
15
16
17
18
19
20
J510
REMOTE IN
(FOR ROTARY COMMANDER)
J10
(ANTENNA)
CN550
(UNILINK IN
CONTROL)
(CHASSIS)
(CHASSIS)
S510
(POWER
SELECT)
ON ← OFF
SW501
RESET
C212
MODEL
C210
MODEL
C212 MODEL
TO
KEY BOARD
CNP701
11

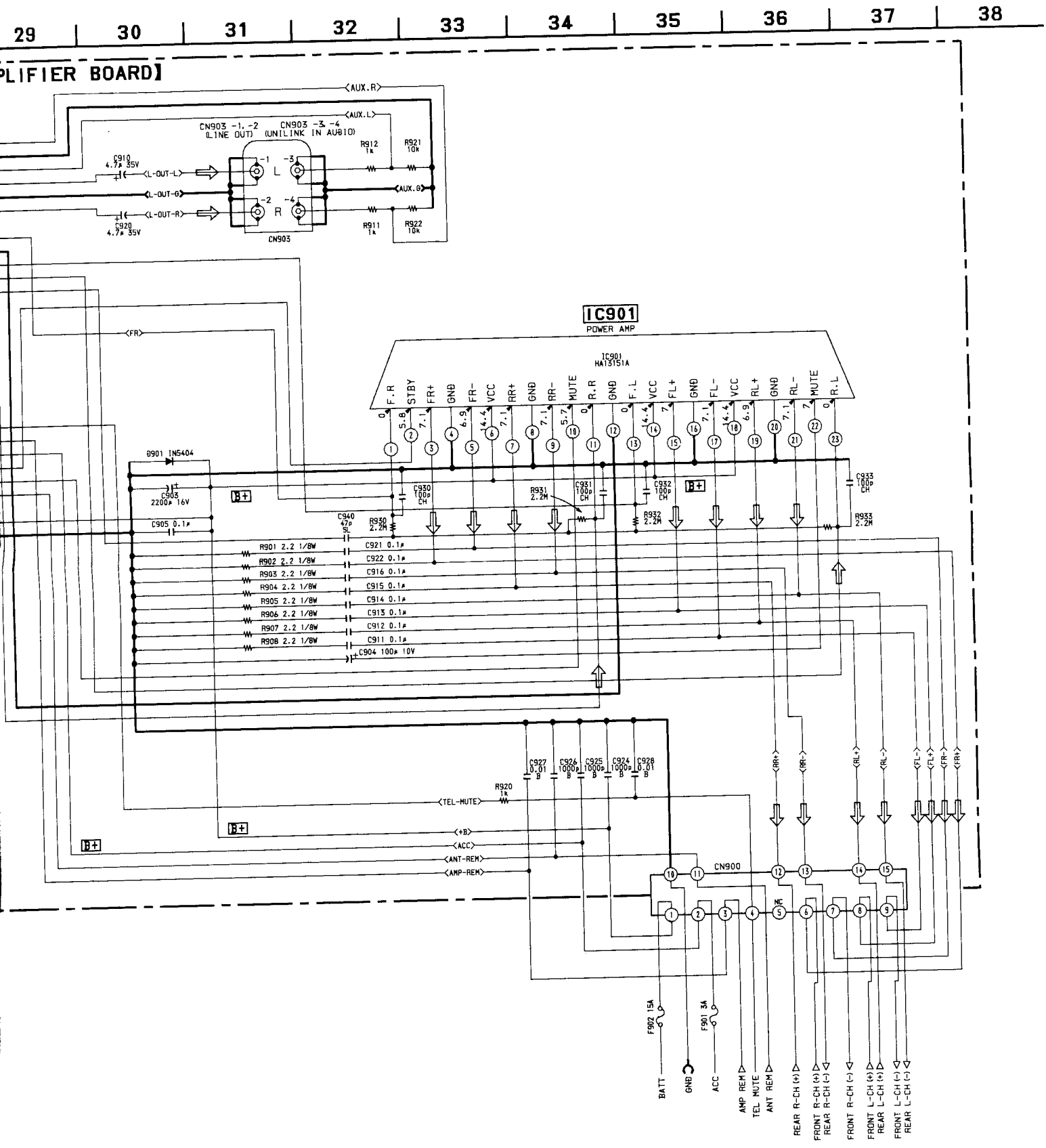
5-5. SCHEMATIC DIAGRAM—MAIN SECTION— • Refer to page 33 for IC Block Diagrams.



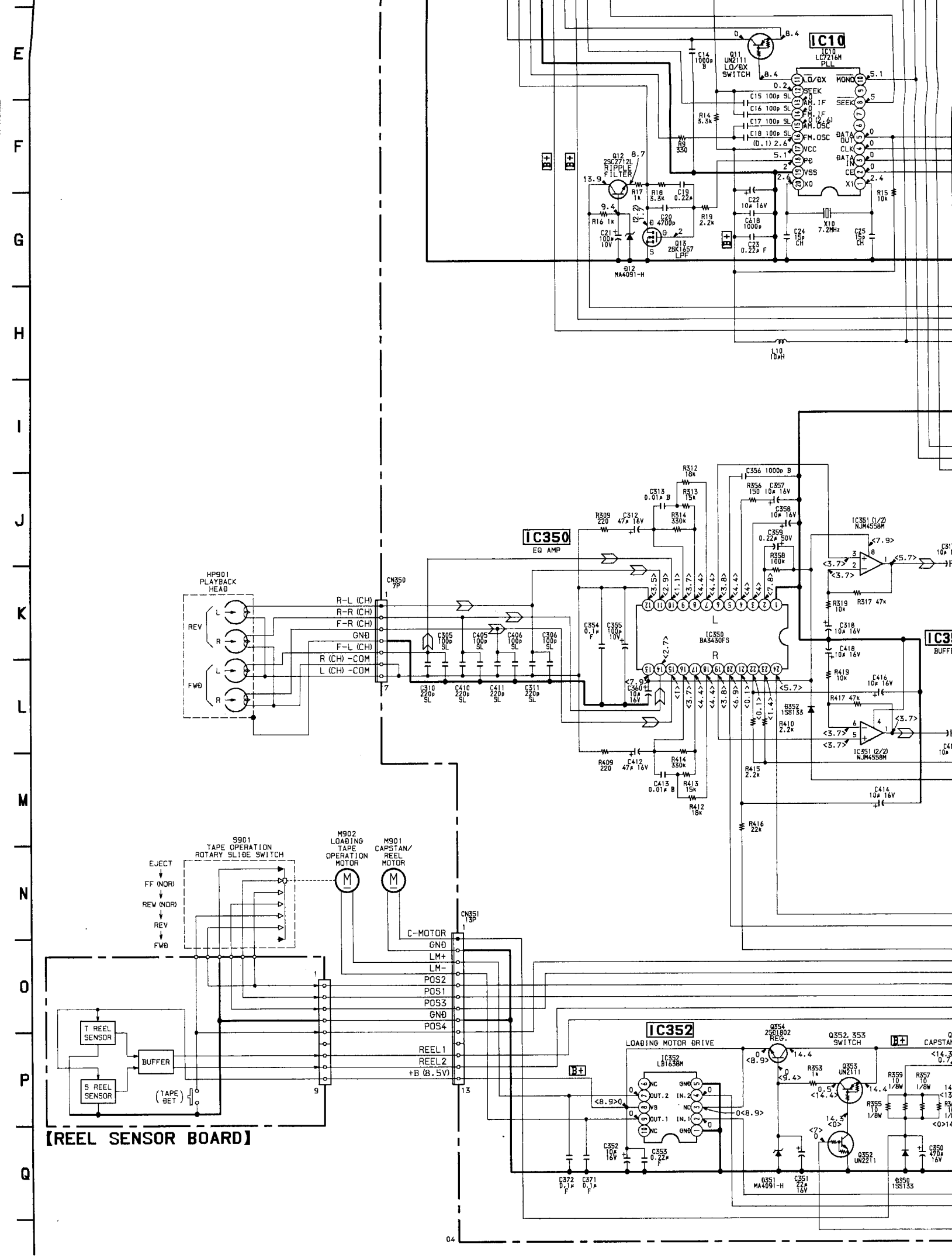

9
10
11
12
13
14
15
16
17
18
C212 MODEL
IC11
IC12
AF AMP
IC12 (1/2) NJM4558M
IC12 (2/2) NJM4558M
IC10
IC10 LC7216M PLL
IC150
IC150 CXA1646Q ELECTRONIC VOLUME
IC351
BUFFER
IC351 (1/2) NJM4558M
IC351 (2/2) NJM4558M
IC510
IC510 #P0755180F-218-3B9 SYSTEM CONTROL
C210 MODEL
S510 (POWER SELECT)
ON ← OFF
X10 7.2MHz
X510 4.19MHz
SWITCH
BUFFER
AUX.R
AUX.L
P-ON-8V
VOL.PLL-DATA
VOL.PLL-CLK
VOL-CE
MUTE
TAPE.L
TAPE.R
LCD-CE
LCD-DATA
LCD-CLK
LCD-INH
ANT+B
AM8V
FM8V
TUNER.ON-5V
ILL.ON
AMP-ON
P-ON
5V
B+
50K
GAIN1
AUX-IN.L
TAPE-IN.L
AM-IN.L
FM-IN.L
AM-IN.R
FM-IN.R
TAPE-IN.R
AUX-IN.R
GAIN2
VREF
VDD
N.C
COLOR
MUTE
AUX-MUTE
BOLBY-ON/OFF
TUNER-MUTE
TAPE-MUTE
RESET
BU.CHECK
CLK-IN
VSS
XT1
XT2
IC
X1
X2

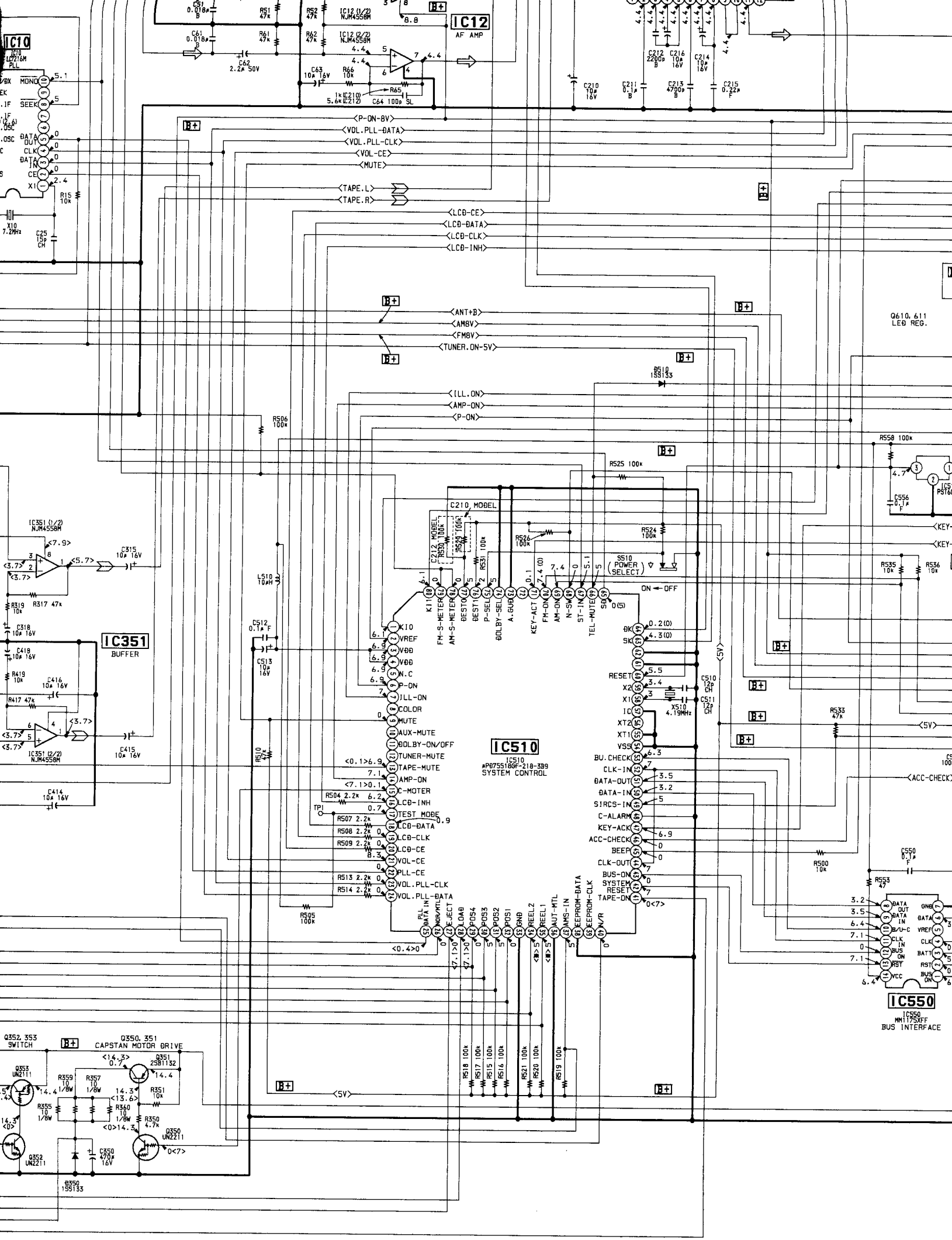

18
19
20
21
22
23
24
25
26
27
C421 4.7µ 35V
C321 4.7µ 35V
CN302 12P
Q120, 130 MUTE
Q130 DTC514TK
Q120 DTC514TK
C130 1µ 50V
R130 1k
R131 22k
R121 22k
R120 1k
C120 1µ 50V
R133 15k
R123 15k
<FL>
<RL>
<LINE-OUT-L>
<LINE-OUT-R>
Q220, 230 MUTE
Q220 DTC514TK
Q230 DTC514TK
C220 1µ 50V
R220 1k
R221 22k
R231 22k
R230 1k
C230 1µ 50V
R223 15k
R233 15k
<RR>
<FR>
D171 MA4039-M
<BEEP>
Q170, 171 MUTE SWITCH
Q171 UN2111
Q170 UN2211
R172 2.2k
C172 1µ 50V
C170 47µ 16V
D170 1SS133
C153 1000p B
C152 22µ 16V
R151 4.7k 1/8W
C151 0.01µ F
R149 10k
C154 0.01µ F
R150 4.7k 1/8W
C150 100µ 10V
D619 1SS133
B+
CN301 10P
R173 10k
R171 6.8k
D620 MA4062-M
C171 10µ 16V
C619 0.01
D618 MA4062-M
D617 MA4062-M
D619 MA4062-M
CN610 12P
R564 100
R563 100
SW501 RESET
D613 MA4062-M
D615 MA4062-M
D614 MA4062-M
D616 MA4062-M
Q611 2SB1132
Q610, 611 LED REG.
R613 10k
R614 2.2k 1/8W
Q610 UN2211
R610 2.2
R611 2.2
Q612 2SB1802
Q613 2SB1802
R612 1.0k 1/8W
C615 0.1µ F
C616 0.022µ F
Q612, 613 ILLUMINATION REG.
D610 MA4110-M
Q614 XN1A512 SWITCH
R558 100k
D563 1SS133
IC512 P5T600E
C556 0.1µ F
C555 0.047F 5.5V
D562 MA152WA
C554 100µ 10V
Q560 UN2111
Q559 UN2111
Q559, 560 SWITCH
D560 MA152WA
R562 10k 0.5%
R561 10k 0.5%
R560 100k
C601 0.1
C602 0.1
<KEY-ACK>
<KEY-ACT>
R535 10k
R536 10k
IC512
RESET
IC610
IC610 BA5910B-V2 POWER CONTROL REG.
GND
MODE2
MODE1
STBY
BU+B
AMP+B
VCC
ANT+B
COM8V
AM8V
FM8V
GND
<AMP-REM>
<ANT-REM>
<ACC>
<BACK-UP>
R601 100
C610 10µ 16V
C611 22µ 16V
C600 100p 5L
C612 10µ 25V
C613 47µ 16V
C614 47µ 16V
D609 MA4062-M
C617 0.01
<LCD+B>
<SIRCS>
R533 47k
<5V>
C552 1000p B
Q555 2SD1802 +5V REG.
R625 2.2k
R559 100k
R577 1.5k
J510
<ACC-CHECK>
<D>5.1
13.8<D>
<0>(6.8)

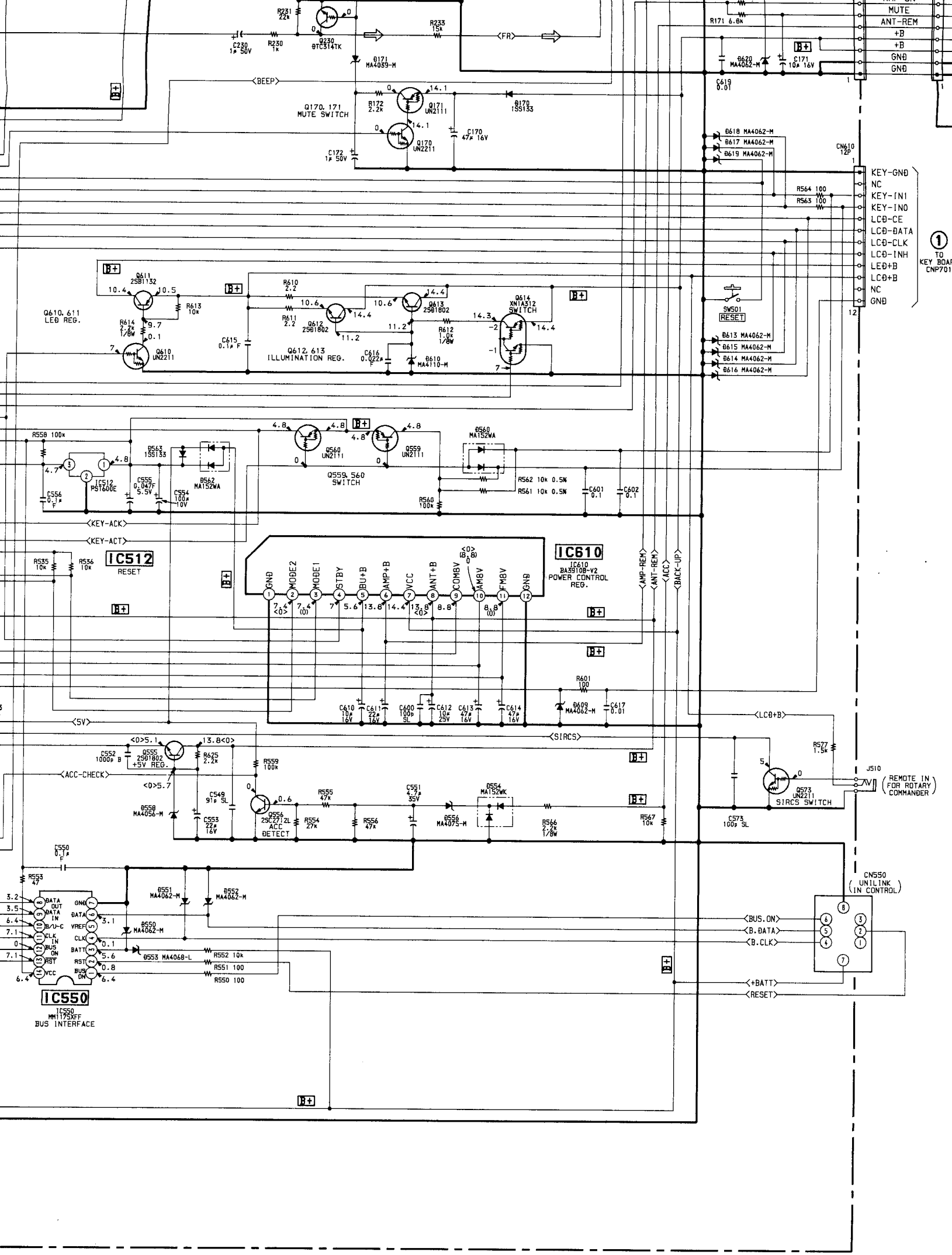

26
27
28
29
30
31
32
33
34
35
【AMPLIFIER BOARD】
CN302 12P
CN902 12P
AUX-R
AUX-G
AUX-L
LINE-OUT.L
LINE-OUT.G
LINE-OUT.R
RR
FR
A.GND
FL
RL
BEEP
CN903 -1, -2 (LINE OUT)
CN903 -3, -4 (UNILINK IN AUDIO)
CN903
C910 4.7μ 35V
C920 4.7μ 35V
R912 1k
R921 10k
R911 1k
R922 10k
IC901
POWER AMP
IC901 HA13151A
F.R
STBY
FR+
GND
FR-
VCC
RR+
GND
RR-
MUTE
R.R
GND
F.L
VCC
FL+
GND
FL-
VCC
CN301 10P
CN901 10P
T-MUTE
AMP-REM
ACC
AMP-ON
MUTE
ANT-REM
+B
+B
GND
GND
R173 10k
R171 6.8k
D620 MA4062-M
C171 10μ 16V
C619 0.01
D901 IN5404
C903 2200μ 16V
C905 0.1μ
C940 47p SL
R930 2.2M
C930 100p CH
R931 2.2M
C931 100p CH
C932 100p CH
R932 2.2M
R901 2.2 1/8W
R902 2.2 1/8W
R903 2.2 1/8W
R904 2.2 1/8W
R905 2.2 1/8W
R906 2.2 1/8W
R907 2.2 1/8W
R908 2.2 1/8W
C921 0.1μ
C922 0.1μ
C916 0.1μ
C915 0.1μ
C914 0.1μ
C913 0.1μ
C912 0.1μ
C911 0.1μ
C904 100μ 10V
D618 MA4062-M
D617 MA4062-M
D619 MA4062-M
CN610 12P
KEY-GND
NC
KEY-IN1
KEY-IN0
LCD-CE
LCD-DATA
LCD-CLK
LCD-INH
LED+B
LCD+B
NC
GND
R564 100
R563 100
TO KEY BOARD CNP701
SW501 RESET
D613 MA4062-M
D615 MA4062-M
D614 MA4062-M
D616 MA4062-M
C927 0.01 B
C926 1000p B
C925 1000p B
C924 1000p B
C928 0.01 B
R920 1k
CN900
F902 15A
F901 3A
BATT
GND
ACC
AMP REM
TEL MUTE
<FR>
<AUX.R>
<AUX.L>
<AUX.G>
<L-OUT-L>
<L-OUT-G>
<L-OUT-R>
<TEL-MUTE>
<+B>
<ACC>
<ANT-REM>
<AMP-REM>
<BACK-UP>
<LCD+B>
R577 1.5k
J510
(REMOTE IN)

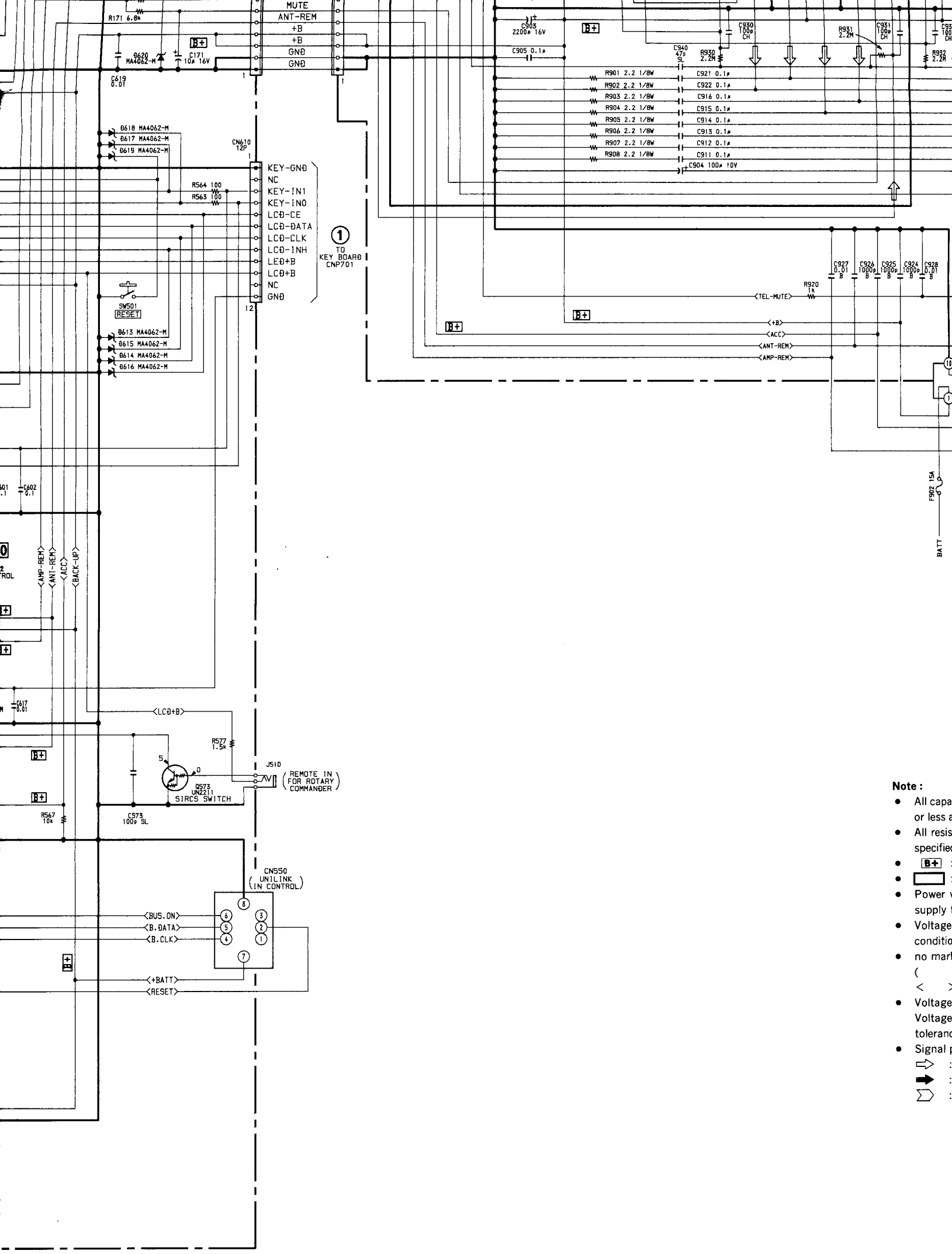

29
30
31
32
33
34
35
36
37
38
PLIFIER BOARD]
IC901
POWER AMP
IC901
HA13151A
F.R
STBY
FR+
GND
FR-
VCC
RR+
GND
RR-
MUTE
R.R
GND
F.L
VCC
FL+
GND
FL-
VCC
RL+
GND
RL-
MUTE
R.L
CN903 -1, -2 (LINE OUT)
CN903 -3, -4 (UNILINK IN AUDIO)
CN903
CN900
D901 IN5404
C903 2200μ 16V
C905 0.1μ
C904 100μ 10V
R901 2.2 1/8W
R902 2.2 1/8W
R903 2.2 1/8W
R904 2.2 1/8W
R905 2.2 1/8W
R906 2.2 1/8W
R907 2.2 1/8W
R908 2.2 1/8W
C911 0.1μ
C912 0.1μ
C913 0.1μ
C914 0.1μ
C915 0.1μ
C916 0.1μ
C921 0.1μ
C922 0.1μ
C930 100p CH
C931 100p CH
C932 100p CH
C933 100p CH
R930 2.2M
R931 2.2M
R932 2.2M
R933 2.2M
C940 47p SL
C924 1000p B
C925 1000p B
C926 1000p B
C927 0.01 B
C928 0.01 B
R920 1k
C910 4.7μ 35V
C920 4.7μ 35V
R911 1k
R912 1k
R921 10k
R922 10k
L-OUT-L
L-OUT-R
AUX.L
AUX.R
AUX.G
FR
TEL-MUTE
+B
ACC
ANT-REM
AMP-REM
F902 15A
F901 3A
BATT
GND
ACC
AMP REM
TEL MUTE
ANT REM
REAR R-CH (+)
FRONT R-CH (+)
REAR R-CH (-)
FRONT R-CH (-)
FRONT L-CH (+)
REAR L-CH (+)
FRONT L-CH (-)
REAR L-CH (-)

Note :


IC10
IC10
LC7216M
PLL
Q11
UN2111
LO/BX
SWITCH
LO/BX
SEEK
AM. 1F
FM. 1F
AM. OSC
FM. OSC
VCC
PD
VSS
XO
DATA OUT
CLK
DATA IN
CE
MONO
SEEK
Q12
2SC2712L
RIPPLE
FILTER
Q13
2SK1657
LPF
X10
7.2MHz
L10
10μH
IC350
EQ AMP
IC350
BA3430FS
IC351 (1/2)
NJM4558M
IC351 (2/2)
NJM4558M
HP901
PLAYBACK
HEAD
REV
FWD
R-L (CH)
R-R (CH)
F-R (CH)
GND
F-L (CH)
R (CH) -COM
L (CH) -COM
CN350
7P
S901
TAPE OPERATION
ROTARY SLIDE SWITCH
EJECT
FF (NOR)
REW (NOR)
REV
FWD
M902
LOADING
TAPE
OPERATION
MOTOR
M901
CAPSTAN/
REEL
MOTOR
CN351
13P
C-MOTOR
GND
LM+
LM-
POS2
POS1
POS3
GND
POS4
REEL1
REEL2
+B (8.5V)
T REEL
SENSOR
S REEL
SENSOR
BUFFER
(TAPE
SET)
【REEL SENSOR BOARD】
IC352
LOADING MOTOR DRIVE
IC352
LB1636M
Q354
2SB1802
REG.
Q352, 353
SWITCH
Q353
UN2111
Q352
UN2211
Q351
MA4091-H
Q350
1SS133
B352
1SS133
B+

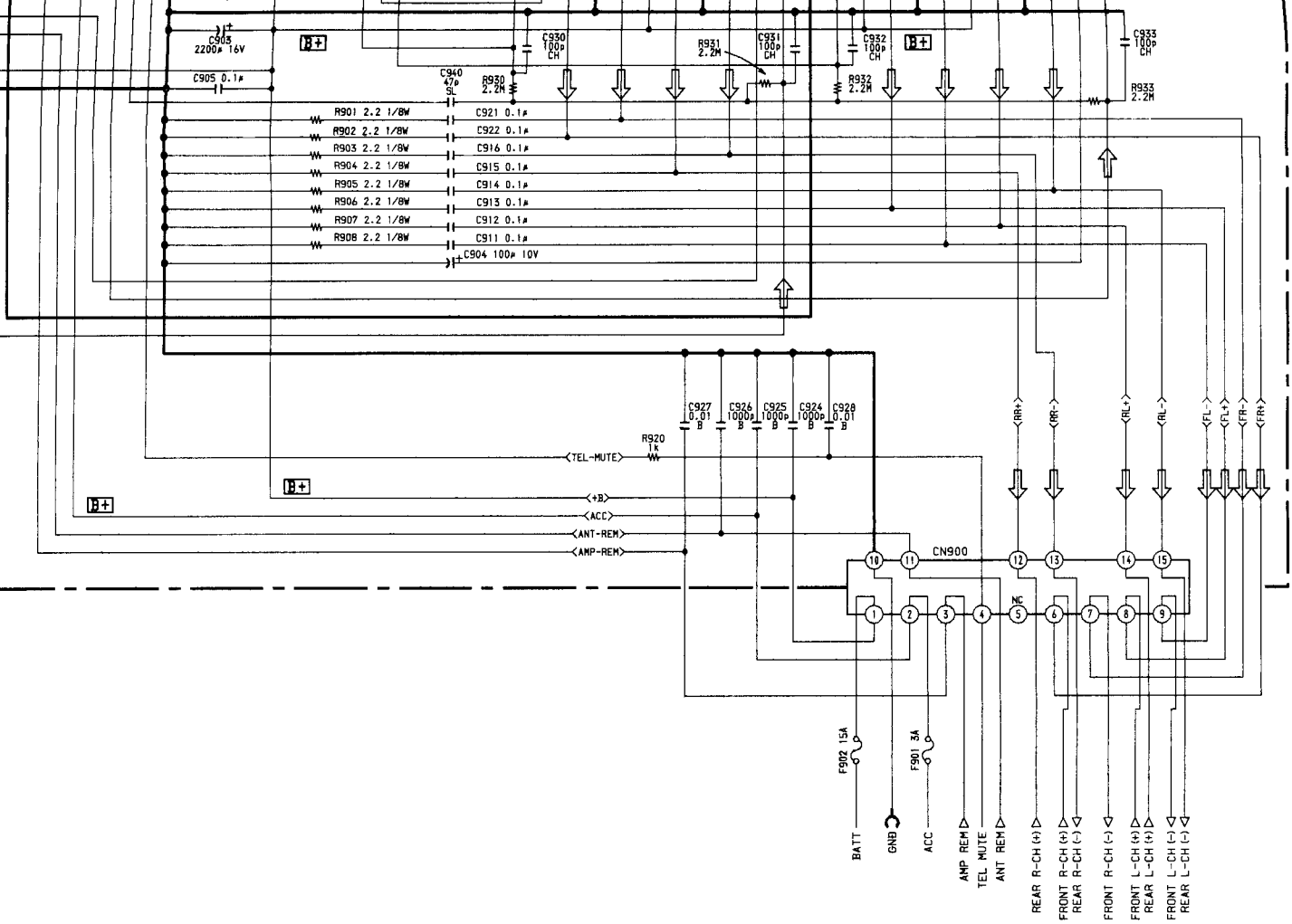

IC12
AF AMP
IC10
PLL
<P-ON-8V>
<VOL.PLL-DATA>
<VOL.PLL-CLK>
<VOL-CE>
<MUTE>
<TAPE.L>
<TAPE.R>
<LCD-CE>
<LCD-DATA>
<LCD-CLK>
<LCD-INH>
<ANT+B>
<AM8V>
<FM8V>
<TUNER.ON-5V>
<ILL.ON>
<AMP-ON>
<P-ON>
Q610, 611
LED REG.
C210 MODEL
IC351
BUFFER
IC351 (1/2)
NJM4558M
IC351 (2/2)
NJM4558M
IC510
#P075S18GF-218-3B9
SYSTEM CONTROL
S510
(POWER SELECT)
ON ← OFF
IC550
MN1175XFF
BUS INTERFACE
Q352, 353
SWITCH
Q350, 351
CAPSTAN MOTOR DRIVE
<ACC-CHECK>
<5V>
B+


IC512
RESET
IC610
IC610
BA3910B-V2
POWER CONTROL
REG.
IC550
IC550
MM1175XFF
BUS INTERFACE
Q610, 611
LEØ REG.
Q612, 613
ILLUMINATION REG.
Q559, 560
SWITCH
Q170, 171
MUTE SWITCH
Q573
UN2211
SIRCS SWITCH
SW501
RESET
CN610
12P
CN550
(UNILINK
IN CONTROL)
J510
(REMOTE IN
FOR ROTARY
COMMANDER)
TO
KEY BOAR
CNP701
KEY-GNØ
NC
KEY-IN1
KEY-IN0
LCØ-CE
LCØ-ØATA
LCØ-CLK
LCØ-INH
LEØ+B
LCØ+B
NC
GNØ
MUTE
ANT-REM
+B
+B
GNØ
GNØ
<FR>
<BEEP>
<KEY-ACK>
<KEY-ACT>
<5V>
<SIRCS>
<LCØ+B>
<ACC-CHECK>
<BUS.ON>
<B.ØATA>
<B.CLK>
<+BATT>
<RESET>
<AMP-REM>
<ANT-REM>
<ACC>
<BACK-UP>
GNØ
MODE2
MODE1
STBY
BU+B
AMP+B
VCC
ANT+B
COMØV
AM8V
FM8V
GNØ



Note :

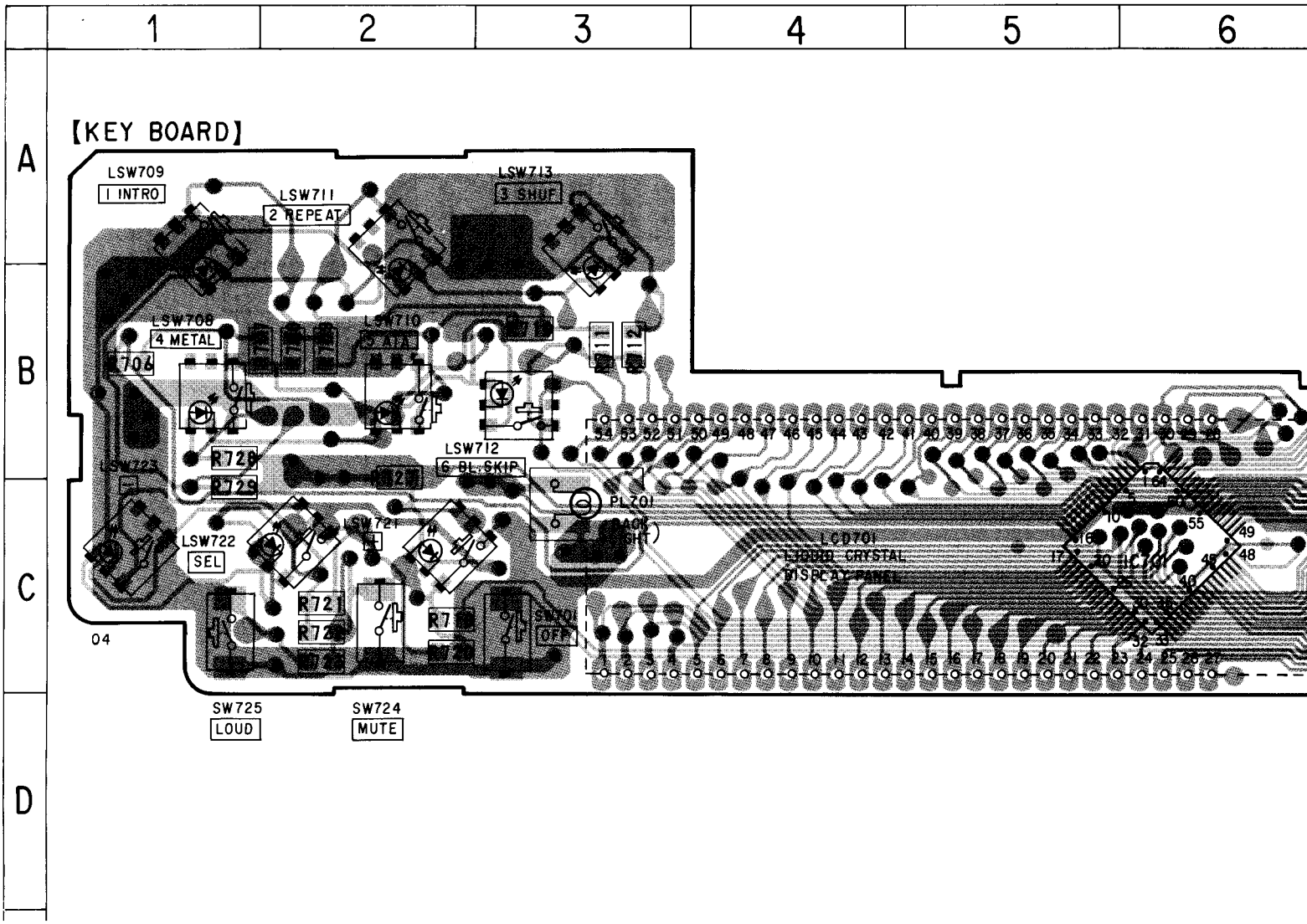
- All capa
  or less a
- All resis
  specifie
- B+ :
- :
- Power v
  supply f
- Voltage
  conditio
- no mar
  (
  < >
- Voltage
  Voltage
  tolerand
- Signal p
  :
  :
  :



Note :

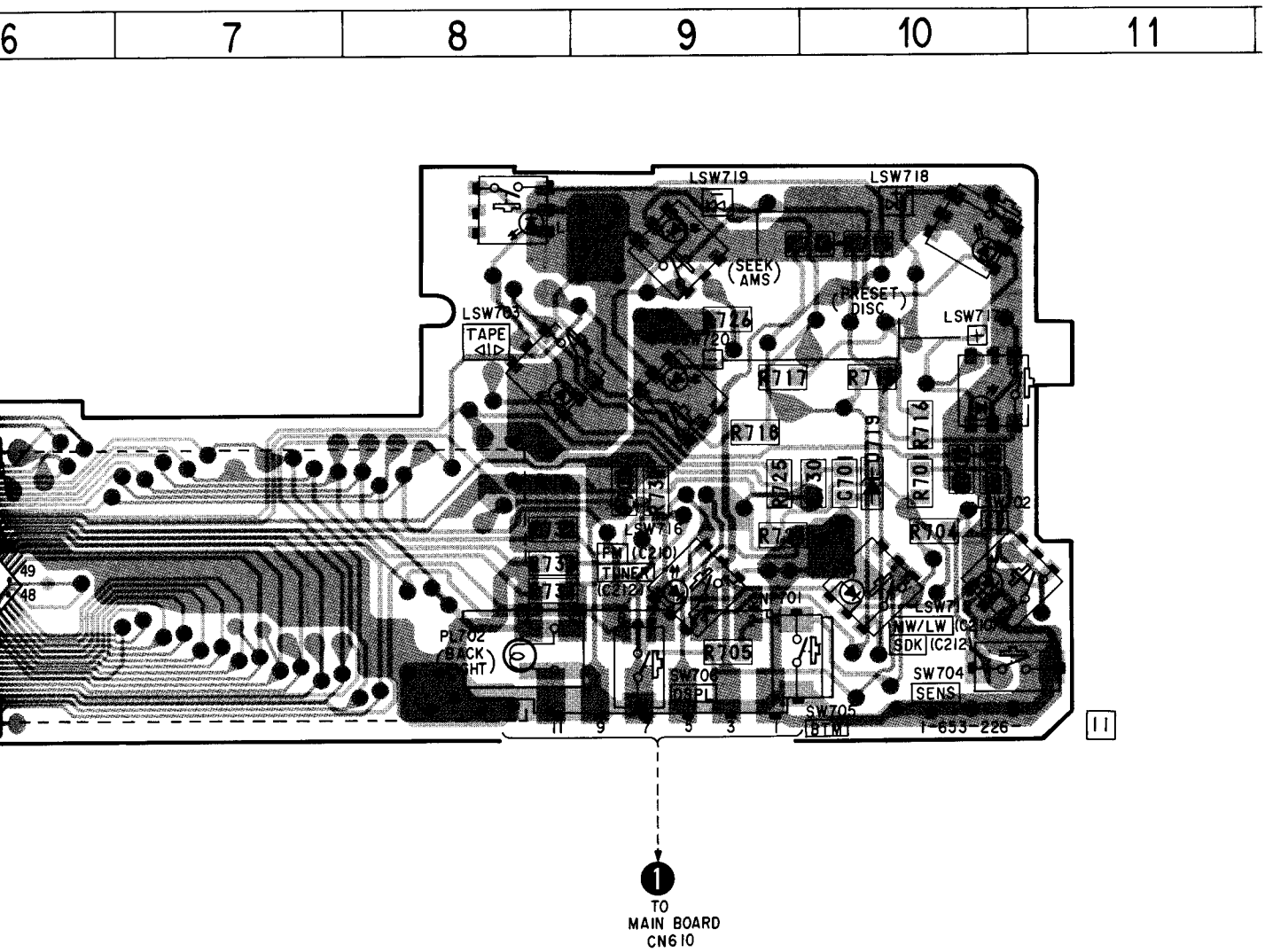
- All capacitors are in μF unless otherwise noted. pF : $\mu\mu$F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- B+ : B+ Line
- ▭ : adjustment for repair.
- Power voltage is dc 14.4V and fed with regulated dc power supply from BATT and ACC terminals.
- Voltage is dc with respect to ground under no-signal (detuned) conditions.
- no mark: FM
  ( ): MW
  < >: PB
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM
  ➡ : MW
  ⇨ : PB

5-6. PRINTED WIRING BOARD—PANEL SECTION— • Refer to page 35 for Semiconductor Lead Layouts.



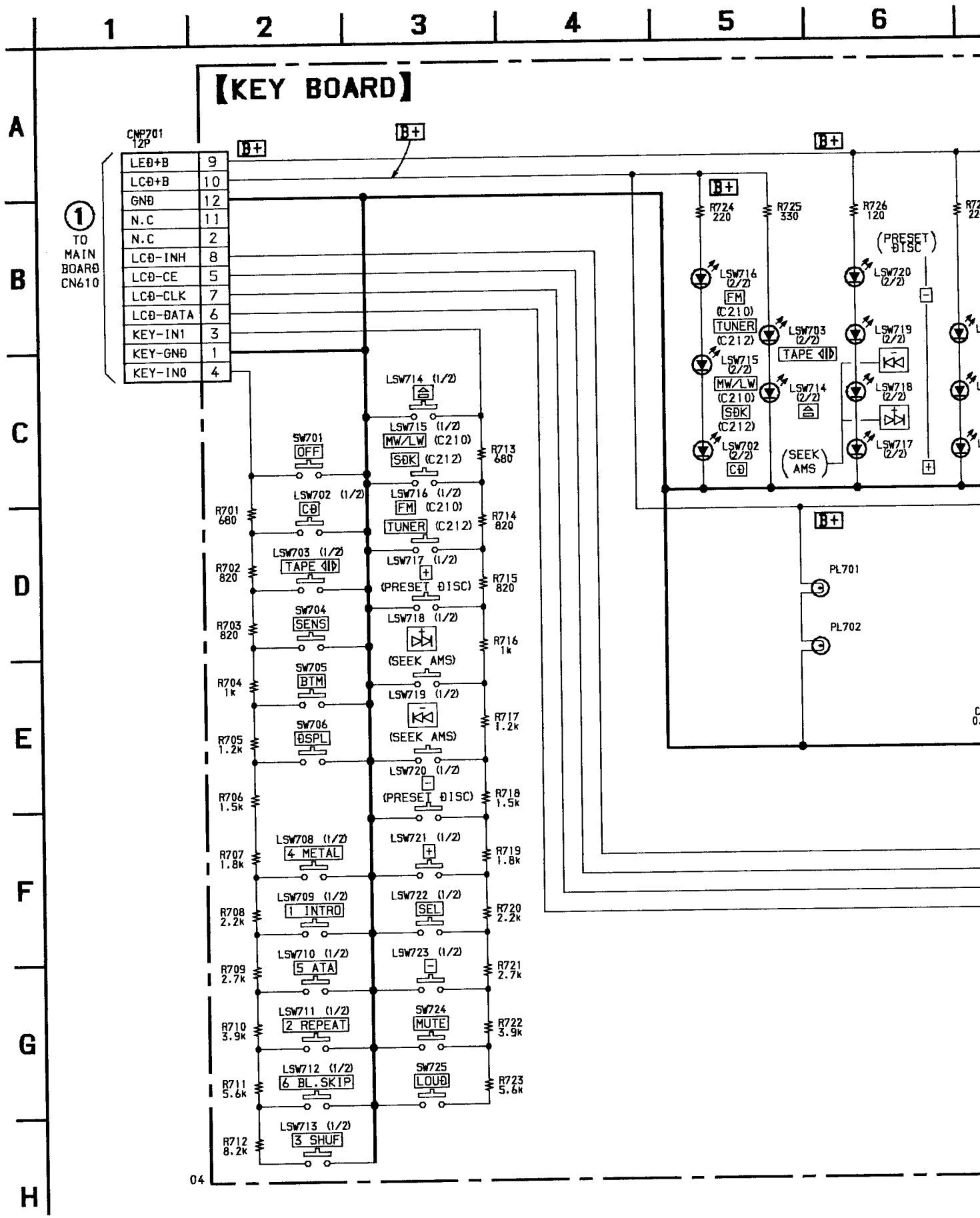
Note :

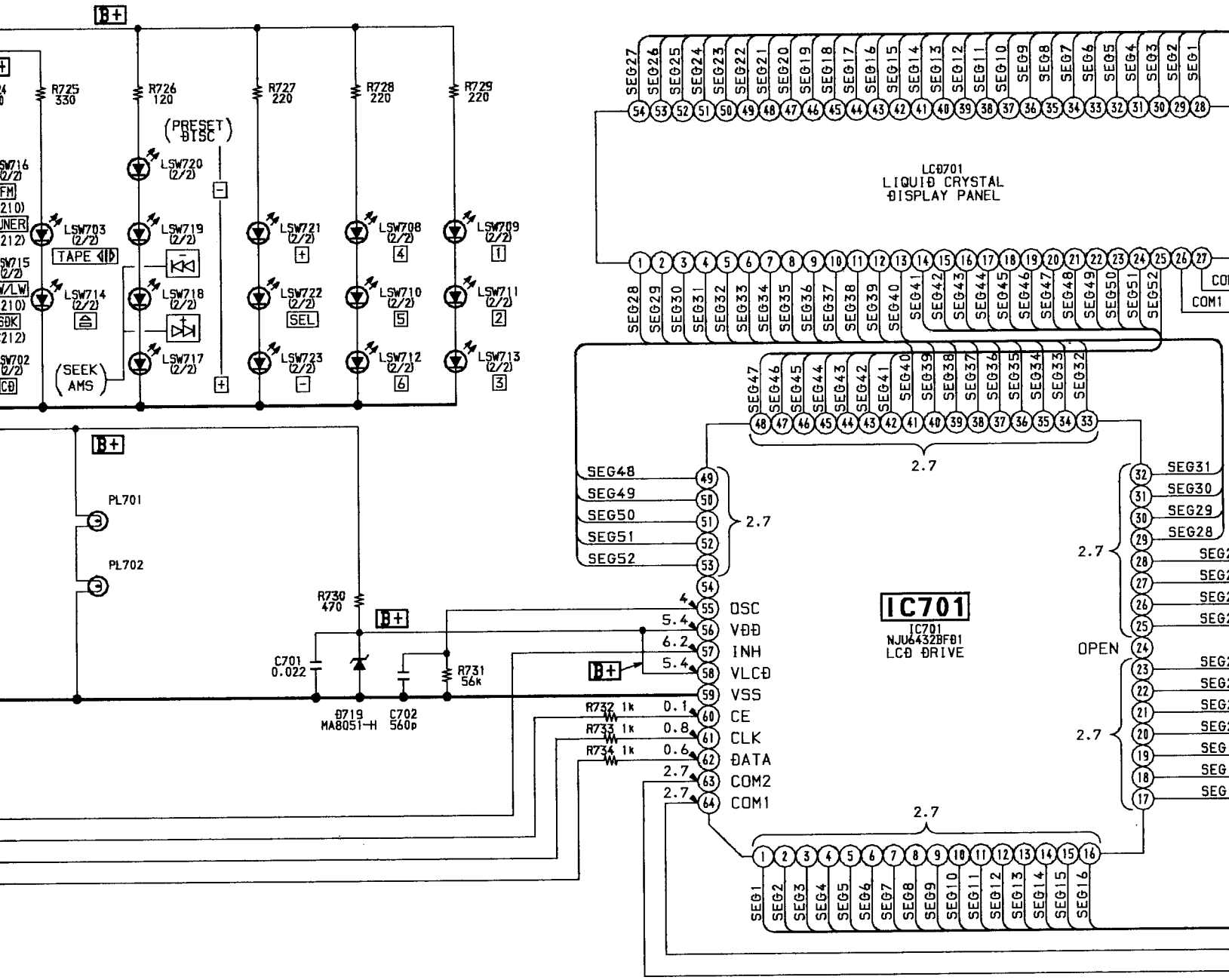
- ○— : parts extracted from the component side.
- ● : Through hole.
- ▒ : Pattern on the side which is seen.
- ▒ : Pattern on the rear side.

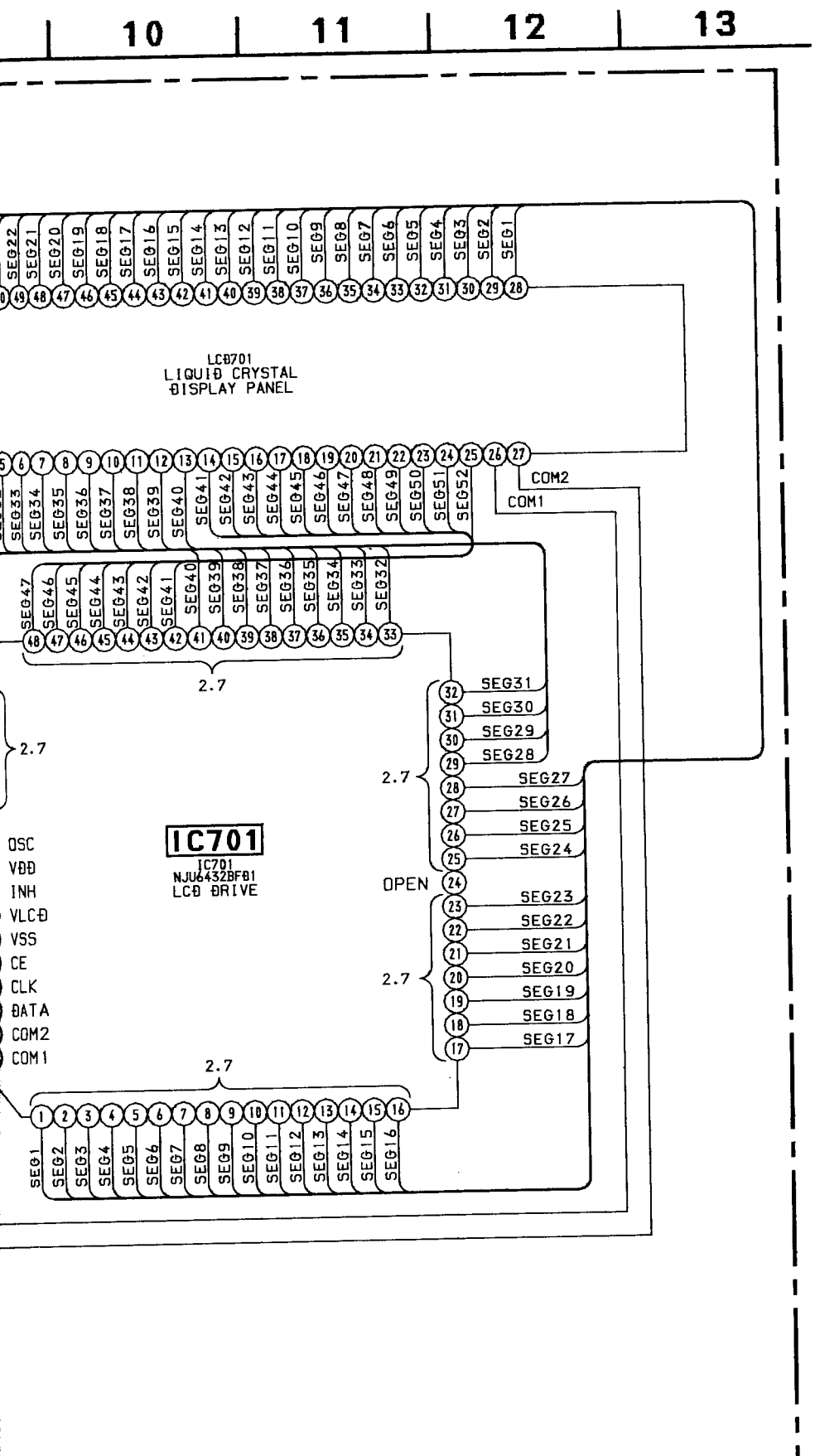

6
7
8
9
10
11
LSW719
LSW718
(SEEK)
AMS
(PRESET)
DISC
LSW703
TAPE
LSW717
R716
R717
R718
R719
R720
R721
R722
C70
R701
R702
R703
R704
LSW716
PW (C210)
TUNER (C212)
CN701
LSW715
NW/LW (C210)
SDK (C212)
PL702
(BACK LIGHT)
R705
SW706
DISPL
SW704
SENS
SW705
(BTM)
49
48
11 9 7 5 3 1
1-653-226
11
1
TO
MAIN BOARD
CN610

A
B
C
D
E
F
G
H

5-7. SCHEMATIC DIAGRAM—PANEL SECTION—




B+
R725 330
R726 120
R727 220
R728 220
R729 220
(PRESET DISC)
LSW720 (2/2)
LSW703 (2/2)
LSW719 (2/2)
LSW721 (2/2)
LSW708 (2/2)
LSW709 (2/2)
TAPE
LSW714 (2/2)
LSW718 (2/2)
LSW722 (2/2)
LSW710 (2/2)
LSW711 (2/2)
SEL
(SEEK AMS)
LSW717 (2/2)
LSW723 (2/2)
LSW712 (2/2)
LSW713 (2/2)
PL701
PL702
R730 470
C701 0.022
D719 MA8051-H
C702 560p
R731 56k
R732 1k
R733 1k
R734 1k
LCD701
LIQUID CRYSTAL DISPLAY PANEL
SEG1 SEG2 SEG3 SEG4 SEG5 SEG6 SEG7 SEG8 SEG9 SEG10 SEG11 SEG12 SEG13 SEG14 SEG15 SEG16
SEG17 SEG18 SEG19 SEG20 SEG21 SEG22 SEG23 SEG24 SEG25 SEG26 SEG27
SEG28 SEG29 SEG30 SEG31 SEG32 SEG33 SEG34 SEG35 SEG36 SEG37 SEG38 SEG39 SEG40 SEG41 SEG42 SEG43 SEG44 SEG45 SEG46 SEG47 SEG48 SEG49 SEG50 SEG51 SEG52
COM1
IC701
IC701
NJU6432BF01
LCD DRIVE
OSC
VDD
INH
VLCD
VSS
CE
CLK
DATA
COM2
COM1
OPEN
2.7
5.4
6.2
4
0.1
0.8
0.6

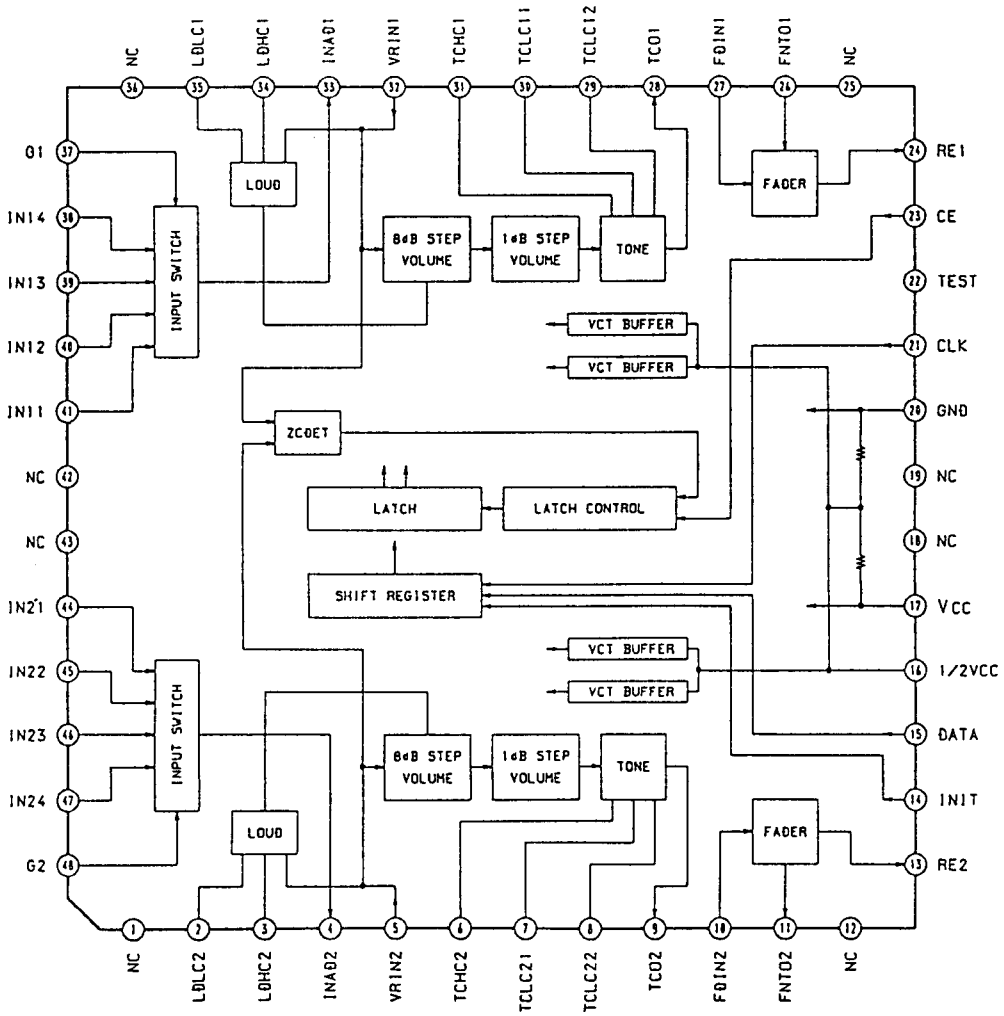


Note :

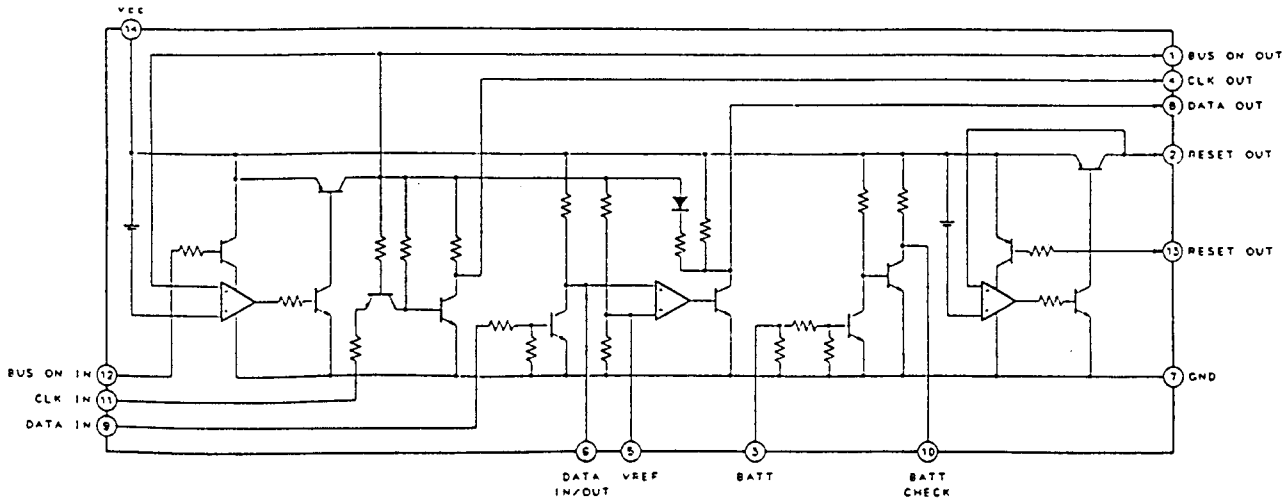
- All capacitors are in μF unless otherwise noted. pF : $\mu\mu$F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- [B+] : B+ Line
- Power voltage is dc 14.4V and fed with regulated dc power supply from BATT and ACC terminals.
- Voltage is dc with respect to ground under no-signal (detuned) conditions.
- no mark: FM
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.

• IC Block Diagrams

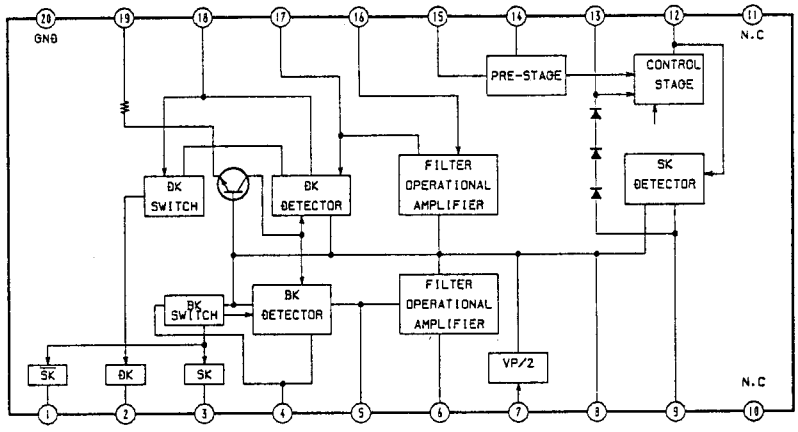
IC150 CXA1646Q



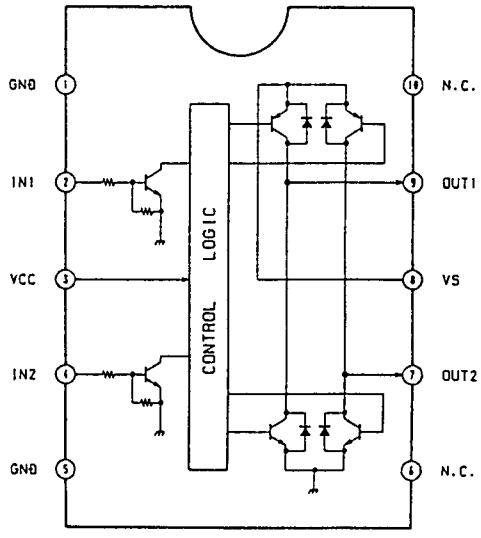
IC550 MM1175XFF



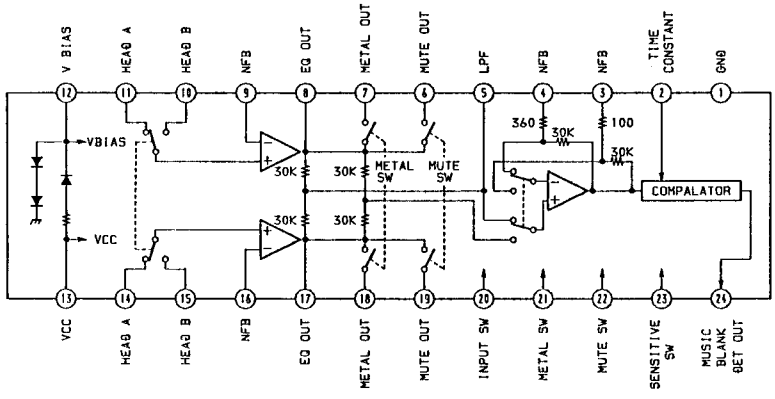
IC11 TDA1581T



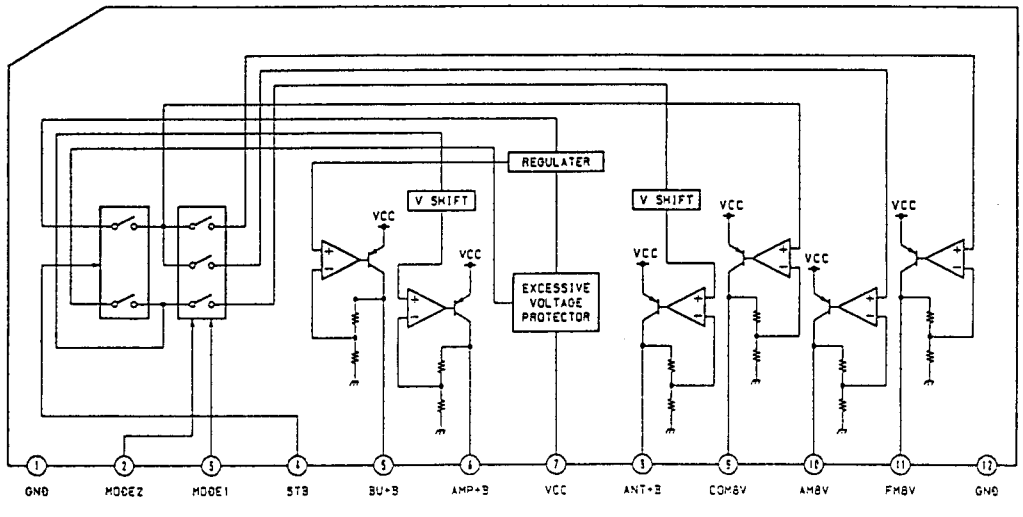
IC352 LB1638M



IC350 BA3430FS

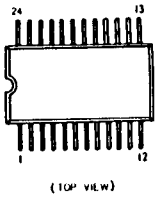


IC610 BA3910B-V2

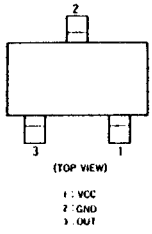


5-8. SEMICONDUCTOR LEAD LAYOUTS

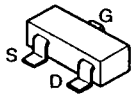
BA3430FS



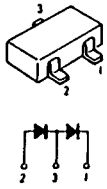
PST600EMT-T1



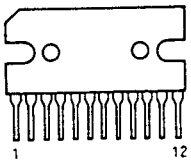
2SK1657-T1B



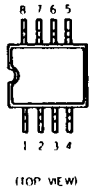
1SS226



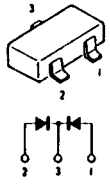
BA3910B-V2



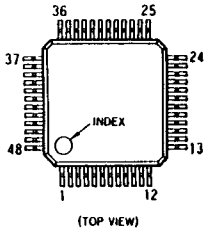
μPC4558G2



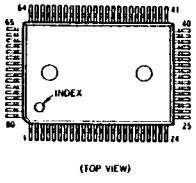
MA152WA
1SS184



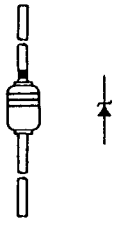
CXA1646Q
NJU6432BFD1



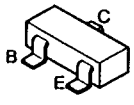
μPD75518GF-219
-3B9



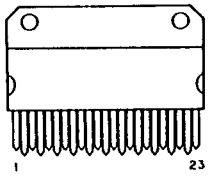
MA4039-M (QZ)
MA4056-M (QZ)
MA4062-M (QZ)
MA4068-L (QZ)
MA4075-M (QZ)
MA4091-H (QZ)
MA4110-M (QZ)



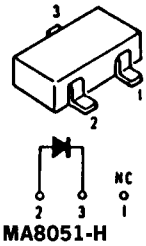
DTC314TKH04
UN2111
UN2211
2SC2712-YG



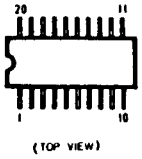
HA13151A



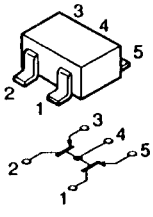
MA721WK-(TX)



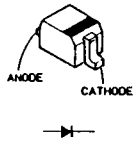
LC7216M
TDA1581T-T



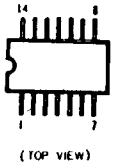
XN1A312-TX



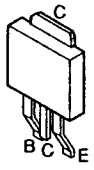
MA8051-H



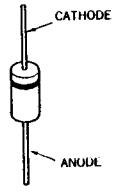
MM1175XFF



2SD1802-S



1N5404TU

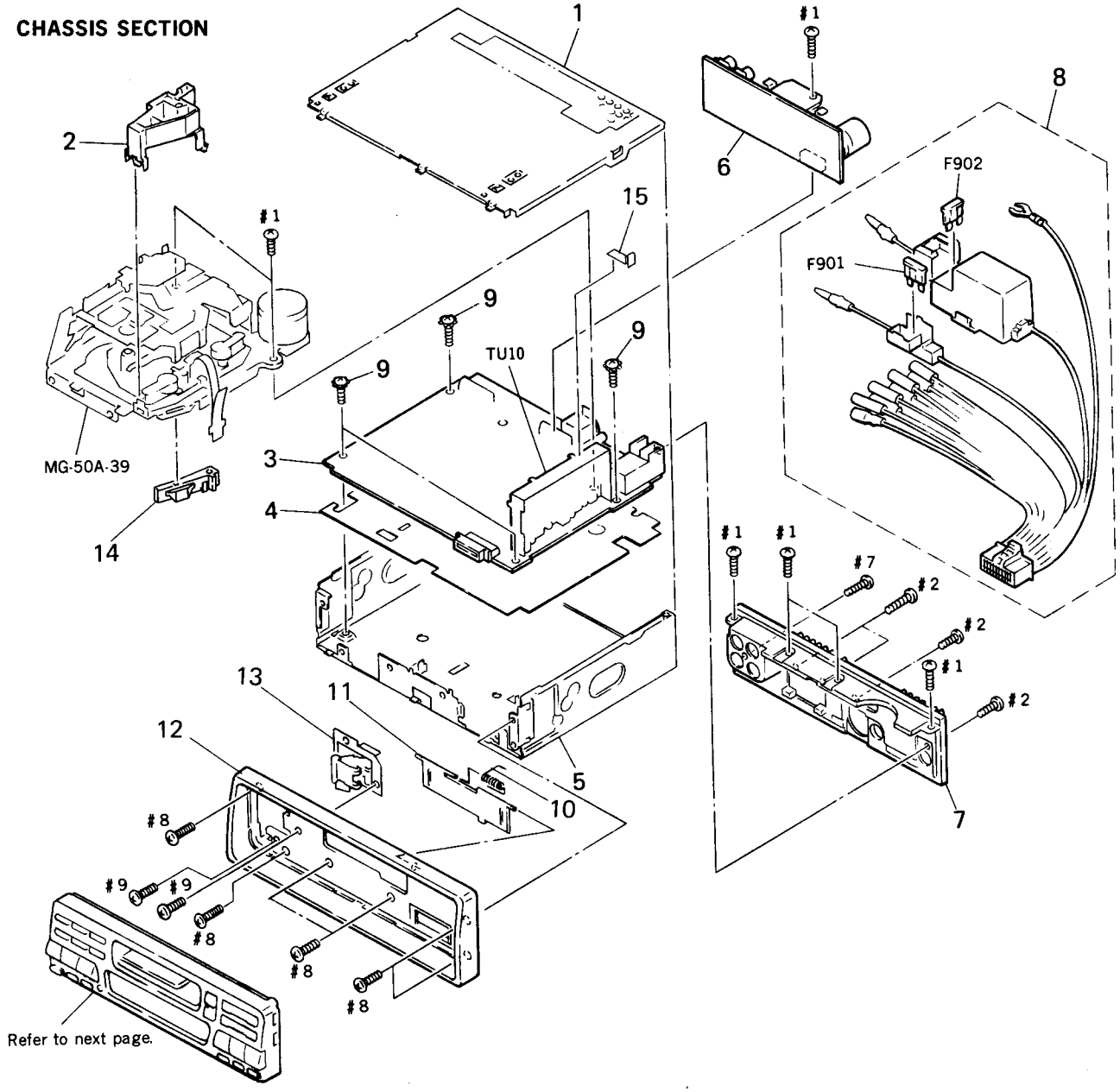


SECTION 6
EXPLODED VIEWS

NOTE:

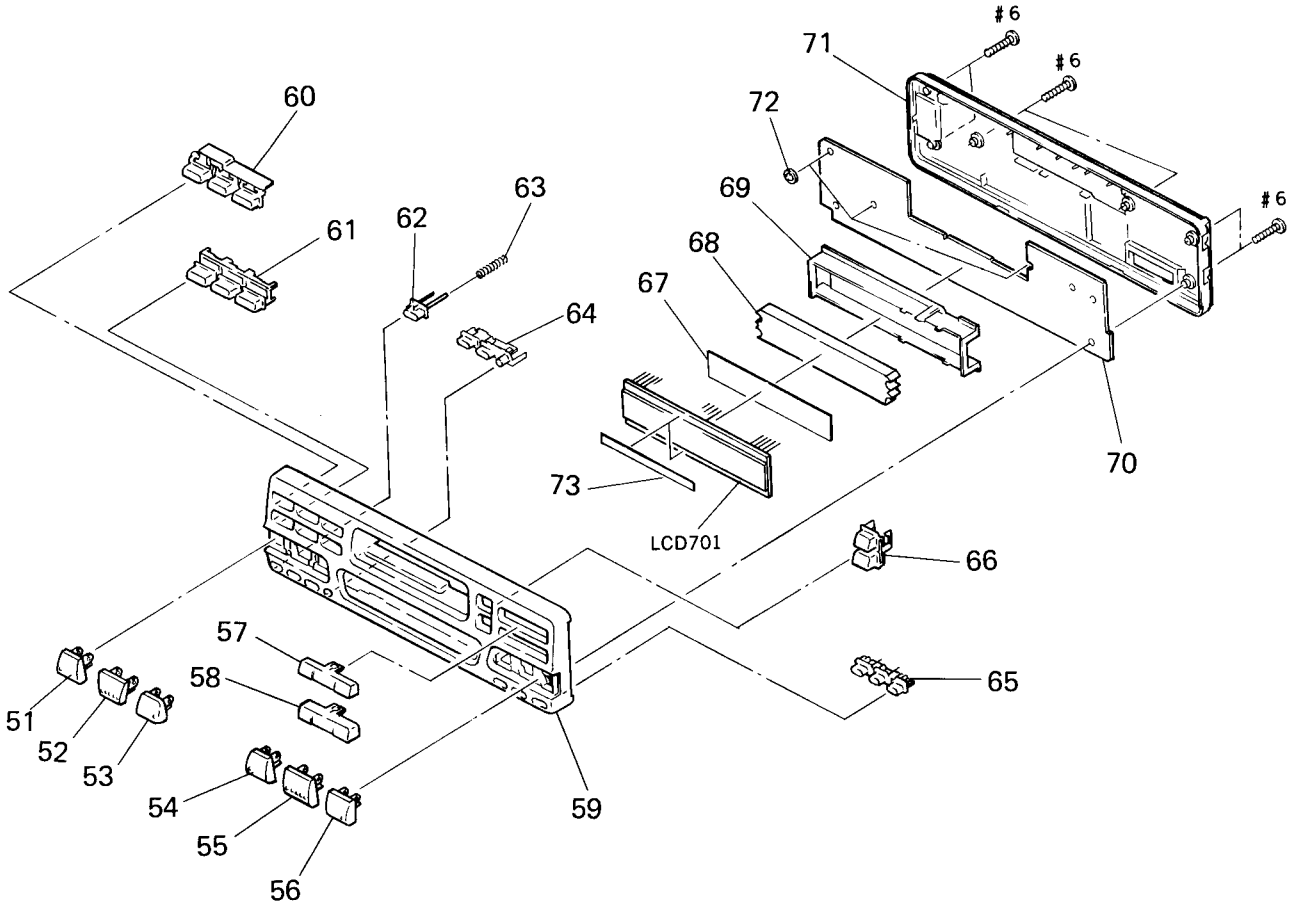
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE)... (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

6-1. CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
* 1	X-3368-833-1	COVER ASSY	
2	3-916-872-01	GUIDE	
* 3	A-3298-253-A	MAIN BOARD, COMPLETE (C212)	
* 3	A-3298-257-A	MAIN BOARD, COMPLETE (C210)	
* 4	3-916-426-01	SHEET, INSULATING	
* 5	X-3368-832-1	CHASSIS ASSY	
* 6	A-3298-255-A	AMPLIFIER BOARD, COMPLETE	
* 7	3-916-377-11	HEAT SINK	
8	1-765-081-11	CORD (WITH CONNECTOR)	
9	3-376-464-11	SCREW (+PTT 2.6X6), GROUND POINT	
10	3-913-076-01	SPRING (C DOOR), TORSION	
11	3-916-378-01	DOOR, CASSETTE	
12	3-916-373-01	PANEL, SUB	
13	X-3367-636-1	LOCK ASSY	
14	3-918-294-01	GUIDE (BELT)	
* 15	3-355-209-01	PLATE (B), GROUND	
F901	1-533-326-11	FUSE (BLADE TYPE) (AUTO FUSE) (3A)	
F902	1-533-331-11	FUSE (BLADE TYPE) (AUTO FUSE) (15A)	
TU10	A-3282-003-A	TUNER UNIT (TUX-001A)	

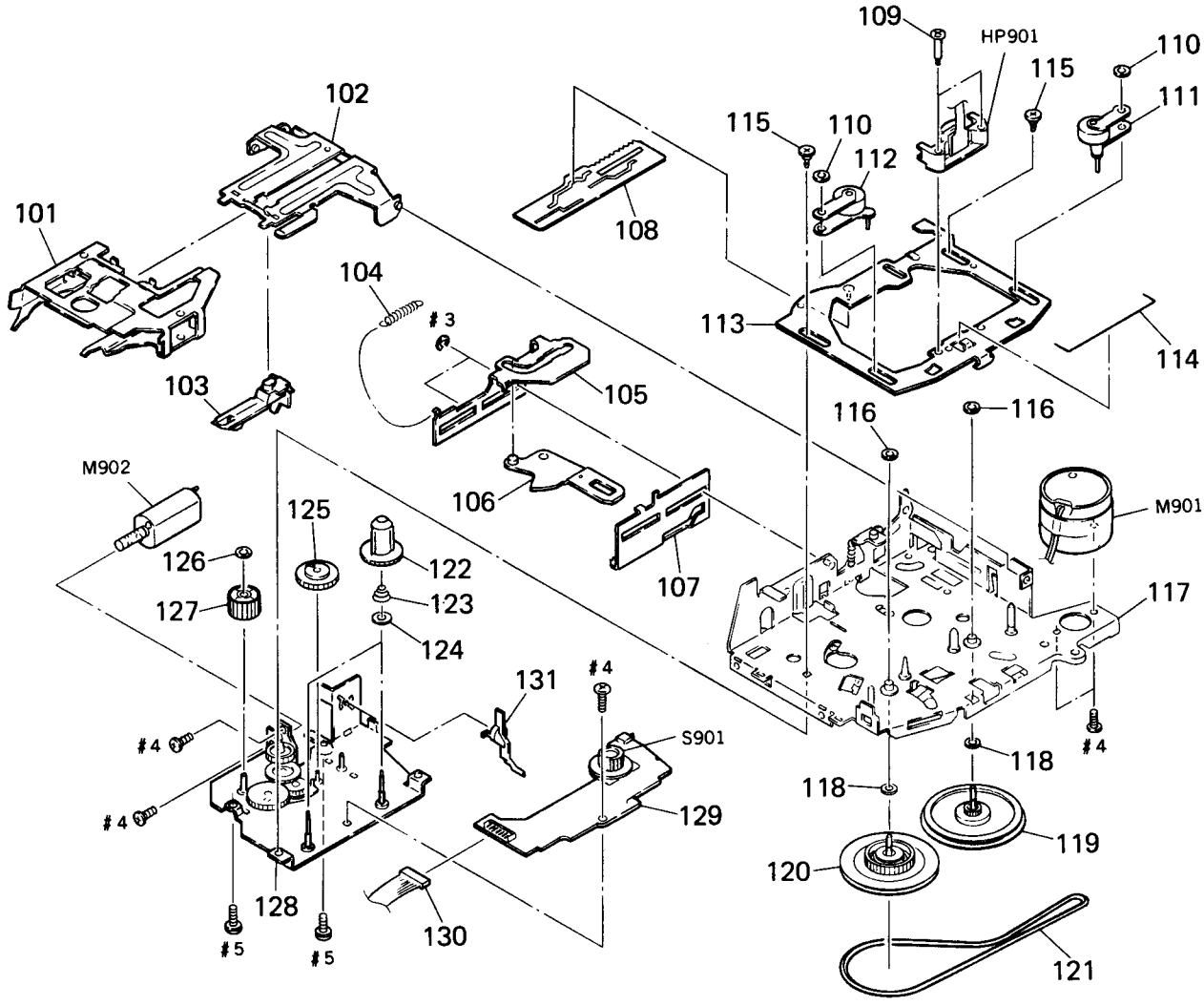
6-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	3-909-316-01	BUTTON (-)	
52	3-909-317-01	BUTTON (SEL)	
53	3-909-318-01	BUTTON (+)	
54	3-909-319-01	BUTTON (C) (C212)	
54	3-909-319-21	BUTTON (C) (C210)	
55	3-909-320-41	BUTTON (D) (C212)	
55	3-909-320-51	BUTTON (D) (C210)	
56	3-909-321-11	BUTTON (E)	
57	3-916-367-01	BUTTON (S/A)	
58	3-916-368-01	BUTTON (P/D)	
59	3-916-362-01	PANEL, FRONT (C210)	
59	3-916-362-11	PANEL, FRONT (C212)	
60	3-916-364-01	BUTTON (1-3)	
61	3-916-365-01	BUTTON (4-6)	

Ref. No.	Part No.	Description	Remark
62	3-904-245-21	BUTTON (RELEASE)	
63	3-904-193-01	SPRING (RELEASE)	
64	3-916-369-01	BUTTON (MUTE)	
65	3-916-370-01	BUTTON (BTM)	
66	3-916-366-01	BUTTON (EJECT)	
* 67	3-917-845-01	REFLECTOR, SHEET	
* 68	3-389-673-01	PLATE (M:LCD), LIGHT GUIDE	
* 69	3-913-756-01	HOLDER (LCD)	
* 70	A-3298-259-A	KEY BOARD, COMPLETE (AMBER)	
* 70	A-3298-261-A	KEY BOARD, COMPLETE (GREEN)	
71	3-916-363-01	PANEL, FRONT BACK	
* 72	3-360-121-11	SPACER (W)	
* 73	3-917-780-01	SHEET (A)	
LCD701	1-810-570-11	DISPLAY PANEL, LIQUID CRYSTAL	

6-3. MECHANISM DECK SECTION (MG-50A-39)



Ref. No.	Part No.	Description	Remark
101	3-912-881-01	HOUSING, CASSETTE	
* 102	3-912-882-01	HANGER, HOUSING	
103	3-912-884-01	CATCHER	
104	3-912-885-01	SPRING (LOADING LEVER), TENSION	
* 105	3-912-892-01	LEVER (B), LOADING	
* 106	3-912-883-01	ARM, SUCTION	
* 107	3-912-891-01	LEVER (A), LOADING	
* 108	3-912-876-01	LEVER, MODE	
109	3-912-893-01	SCREW, HEAD FITTING	
110	3-579-788-01	WASHER, STOPPER	
111	X-3368-266-1	PINCH LEVER (F) ASSY	
112	X-3368-267-1	PINCH LEVER (R) ASSY	
* 113	X-3368-268-1	BASE ASSY, HEAD	
114	3-912-879-01	SPRING, PINCH PRESS	
115	3-912-897-01	SCREW (HB), STEP	
116	3-364-151-01	WASHER	
117	X-3368-841-1	CHASSIS (SV) ASSY (A), MECHANICAL	
118	3-701-437-21	WASHER	

Ref. No.	Part No.	Description	Remark
119	3-913-825-01	FLYWHEEL (FZ)	
120	X-3369-124-1	CLUTCH (S) ASSY, FR	
121	3-912-896-01	BELT	
122	X-3368-843-1	GEAR ASSY, REEL	
123	3-917-222-01	SPRING (B-T), COIL	
124	3-917-324-01	WASHER (B-T)	
125	3-912-888-01	GEAR (LOADING E)	
126	3-321-813-01	WASHER, COTTER POLYETHYLENE	
127	3-912-889-01	GEAR (LOADING F)	
128	X-3368-842-1	BRACKET ASSY, REEL	
129	1-589-604-11	REEL SENSOR BOARD	
130	1-765-460-11	CORD (WITH CONNECTOR)	
131	3-912-895-01	LEVER (TAPE IN)	
HP901	1-500-105-11	HEAD, MAGNETIC (PLAYBACK)	
M901	X-3368-684-1	MOTOR ASSY, MAIN	
M902	X-3368-685-1	MOTOR ASSY, SUB	
S901	1-692-885-12	SWITCH, ROTARY SLIDE (TAPE OPERATION)	

SECTION 7
ELECTRICAL PARTS LIST

AMPLIFIER **KEY**

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	A-3298-255-A	AMPLIFIER BOARD, COMPLETE			
		**********			
*	3-916-377-01	HEAT SINK			
	7-685-134-19	SCREW +P 2.6X8 TYPE2 NON-SLIT			
	7-621-770-67	SCREW +PTT 2.6X6 (S)			
	7-621-770-XX	SCREW +PTT 2.6X8 (S)			
		< CAPACITOR >			
C903	1-126-768-11	ELECT	2200uF	20%	16V
C904	1-124-584-00	ELECT	100uF	20%	10V
C905	1-130-495-71	MYLAR	0.1uF	5%	50V
C910	1-126-163-11	ELECT	4.7uF	20%	50V
C911-916					
	1-130-495-71	MYLAR	0.1uF	5%	50V
C920	1-126-163-11	ELECT	4.7uF	20%	50V
C921	1-130-495-71	MYLAR	0.1uF	5%	50V
C922	1-130-495-71	MYLAR	0.1uF	5%	50V
C924-926					
	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C927	1-164-232-11	CERAMIC CHIP	0.01uF	10%	100V
C928	1-164-232-11	CERAMIC CHIP	0.01uF	10%	100V
C930-933					
	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C940	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
		< CONNECTOR >			
CN900	1-764-426-21	PLUG, CONNECTOR 15P			
* CN901	1-563-464-11	SOCKET, CONNECTOR 10P			
CN902	1-573-122-11	SOCKET, CONNECTOR 12P			
CN903	1-766-453-11	JACK, PIN 4P (UNILINK IN AUDIO/LINE OUT)			
		< DIODE >			
D901	8-719-049-38	DIODE 1N5404TU			
		< IC >			
IC901	8-759-279-87	IC HA13151A			
		< RESISTOR >			
R901-908					
	1-216-134-00	METAL CHIP	2.2	5%	1/8W
R911	1-216-049-00	METAL CHIP	1K	5%	1/10W
R912	1-216-049-00	METAL CHIP	1K	5%	1/10W
R920	1-216-049-00	METAL CHIP	1K	5%	1/10W
R921	1-216-073-00	METAL CHIP	10K	5%	1/10W
R922	1-216-073-00	METAL CHIP	10K	5%	1/10W
R930-933					
	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
**********					
*	A-3298-259-A	KEY BOARD, COMPLETE (AMBER)			
*	A-3298-261-A	KEY BOARD, COMPLETE (GREEN)			
		**********			
*	3-389-673-01	PLATE (M:LCD), LIGHT GUIDE			
*	3-913-756-01	HOLDER (LCD)			
*	3-917-297-01	REFLECTOR, SHEET			
		< CAPACITOR >			
C701	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C702	1-163-006-11	CERAMIC CHIP	560PF	10%	50V
		< CONNECTOR >			
CNP701	1-764-423-11	PIN, CONNECTOR 12P			
		< DIODE >			
D719	8-719-422-43	DIODE MA8051-H			
		< IC >			
IC701	8-759-279-54	IC NJU6432BFD1			
		< LIQUID CRYSTAL DISPLAY >			
LCD701	1-810-570-11	DISPLAY PANEL, LIQUID CRYSTAL			

KEY

Ref. No.	Part No.	Description	Remark
		< SWITCH >	
LSW702	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (CD) (AMBER)	
LSW702	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (CD) (GREEN)	
LSW703	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (TAPE ◁I▷) (AMBER)	
LSW703	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (TAPE ◁I▷) (GREEN)	
LSW708	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (4 METAL) (AMBER)	
LSW708	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (4 METAL) (GREEN)	
LSW709	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (1 INTRO) (AMBER)	
LSW709	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (1 INTRO) (GREN)	
LSW710	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (5 ATA) (AMBER)	
LSW710	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (5 ATA) (GREEN)	
LSW711	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (2 REPEAT) (AMBER)	
LSW711	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (2 REPEAT) (GREEN)	
LSW712	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (6 BL. SKIP) (AMBER)	
LSW712	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (6 BL. SKIP) (GREEN)	
LSW713	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (3 SHUF) (AMBER)	
LSW713	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (3 SHUF) (GREEN)	
LSW714	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (⏏) (AMBER)	
LSW714	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (⏏) (GREEN)	
LSW715	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (SDK) (C212)	
LSW715	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (MW/LW) (C210:AMBER)	
LSW715	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (MW/LW) (C210:GREEN)	
LSW716	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (TUNER) (C212)	
LSW716	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (FM) (C210:AMBER)	
LSW716	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (FM) (C210:GREEN)	
LSW717	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (+ (PRESET DISC)) (AMBER)	
LSW717	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (+ (PRESET DISC)) (GREEN)	
LSW718	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (+ ▷▷I (SEEK AMS)) (AMBER)	
LSW718	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (+ ▷▷I (SEEK AMS)) (GREEN)	
LSW719	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (- I◁◁ (SEEK AMS)) (AMBER)	
LSW719	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (- I◁◁ (SEEK AMS)) (GREEN)	
LSW720	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (- (PRESET DISC)) (AMBER)	
LSW720	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (- (PRESET DISC)) (GREEN)	
LSW721	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (+) (AMBER)	
LSW721	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (+) (GREEN)	
LSW722	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (SEL) (AMBER)	
LSW722	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (SEL) (GREEN)	
LSW723	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (-) (AMBER)	
LSW723	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (-) (GREEN)	
		< PILOT LAMP >	
PL701	1-517-165-21	LAMP, PILOT (AMBER)	
PL701	1-517-166-21	LAMP, PILOT (GREEN)	
PL702	1-517-165-21	LAMP, PILOT (AMBER)	
PL702	1-517-166-21	LAMP, PILOT (GREEN)	
		< RESISTOR >	
R701	1-216-045-00	METAL CHIP 680 5% 1/10W	
R702	1-216-047-00	METAL CHIP 820 5% 1/10W	
R703	1-216-047-00	METAL CHIP 820 5% 1/10W	
R704	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R705	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R706	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R707	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R708	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R709	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R710	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R711	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R712	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R713	1-216-045-00	METAL CHIP 680 5% 1/10W	
R714	1-216-047-00	METAL CHIP 820 5% 1/10W	
R715	1-216-047-00	METAL CHIP 820 5% 1/10W	
R716	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R717	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R718	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R719	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R720	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	

Ref.No.	Part No.	Description			Remark
R721	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R722	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R723	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R724	1-216-033-00	METAL CHIP	220	5%	1/10W
R725	1-216-037-00	METAL CHIP	330	5%	1/10W
R726	1-216-027-00	METAL CHIP	120	5%	1/10W
R727-729					
	1-216-033-00	METAL CHIP	220	5%	1/10W
R730	1-216-041-00	METAL CHIP	470	5%	1/10W
R731	1-216-091-00	METAL CHIP	56K	5%	1/10W
R732-734					
	1-216-049-00	METAL CHIP	1K	5%	1/10W
		< SWITCH >			
SW701	1-692-037-31	SWITCH, KEY BOARD (OFF)			
SW704	1-692-037-31	SWITCH, KEY BOARD (SENS)			
SW705	1-692-037-31	SWITCH, KEY BOARD (BTM)			
SW706	1-692-037-31	SWITCH, KEY BOARD (DSPL)			
SW724	1-692-037-31	SWITCH, KEY BOARD (MUTE)			
SW725	1-692-037-31	SWITCH, KEY BOARD (LOUD)			
**********					
*	A-3298-253-A	MAIN BOARD, COMPLETE (C212)			
*	A-3298-257-A	MAIN BOARD, COMPLETE (C210)			
		**********			
		< CAPACITOR >			
C9	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C10-12					
	1-124-584-00	ELECT	100uF	20%	10V
C13	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C14	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C15-18					
	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C19	1-136-169-00	FILM	0.22uF	5%	50V
C20	1-130-479-00	MYLAR	0.0047uF	5%	50V
C21	1-124-584-00	ELECT	100uF	20%	10V
C22	1-126-157-11	ELECT	10uF	20%	16V
C23	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C24	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C25	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C26	1-130-477-00	MYLAR (C212)	0.0033uF	5%	50V
C27	1-136-495-11	FILM (C212)	0.068uF	5%	50V
C28	1-136-495-11	FILM (C212)	0.068uF	5%	50V
C29	1-163-038-00	CERAMIC CHIP (C212)	0.1uF		25V
C30	1-163-038-00	CERAMIC CHIP (C212)	0.1uF		25V

Ref.No.	Part No.	Description			Remark
C31	1-163-809-11	CERAMIC CHIP (C212)	0.047uF	10%	25V
C32	1-163-809-11	CERAMIC CHIP (C212)	0.047uF	10%	25V
C33	1-124-229-00	ELECT (C212)	33uF	20%	10V
C34	1-163-033-00	CERAMIC CHIP (C212)	0.022uF		50V
C35	1-164-222-11	CERAMIC CHIP (C212)	0.22uF		25V
C36	1-163-038-00	CERAMIC CHIP (C212)	0.1uF		25V
C37	1-126-163-11	ELECT (C212)	4.7uF	20%	50V
C39	1-136-495-11	FILM	0.068uF	5%	50V
C40	1-162-841-11	ELECT	0.015uF	10%	16V
C41	1-163-117-00	CERAMIC CHIP (C212)	100PF	5%	50V
C51	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V
C52	1-124-257-00	ELECT	2.2uF	20%	50V
C53	1-126-157-11	ELECT	10uF	20%	16V
C54	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C56	1-124-257-00	ELECT	2.2uF	20%	50V
C61	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V
C62	1-124-257-00	ELECT	2.2uF	20%	50V
C63	1-126-157-11	ELECT	10uF	20%	16V
C64	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C66	1-124-257-00	ELECT	2.2uF	20%	50V
C110	1-126-157-11	ELECT	10uF	20%	16V
C111	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C112	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C113	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C114	1-126-157-11	ELECT	10uF	20%	16V
C115	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C116	1-126-157-11	ELECT	10uF	20%	16V
C120	1-126-044-11	ELECT	1uF	20%	50V
C130	1-126-044-11	ELECT	1uF	20%	50V
C150	1-124-584-00	ELECT	100uF	20%	10V
C151	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C152	1-124-234-00	ELECT	22uF	20%	16V
C153	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C154	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C170	1-124-589-11	ELECT	47uF	20%	16V
C171	1-126-157-11	ELECT	10uF	20%	16V
C172	1-126-301-11	ELECT	1uF	20%	50V
C210	1-126-157-11	ELECT	10uF	20%	16V
C211	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C212	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C213	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C214	1-126-157-11	ELECT	10uF	20%	16V

MAIN

Ref. No.	Part No.	Description			Remark
C215	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C216	1-126-157-11	ELECT	10uF	20%	16V
C220	1-126-044-11	ELECT	1uF	20%	50V
C230	1-126-044-11	ELECT	1uF	20%	50V
C305	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C306	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C310	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C311	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C312	1-124-589-11	ELECT	47uF	20%	16V
C313	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C315	1-126-157-11	ELECT	10uF	20%	16V
C318	1-126-157-11	ELECT	10uF	20%	16V
C321	1-126-163-11	ELECT	4.7uF	20%	50V
C350	1-126-935-11	ELECT	470uF	20%	16V
C351	1-124-234-00	ELECT	22uF	20%	16V
C352	1-126-157-11	ELECT	10uF	20%	16V
C353	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C354	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C355	1-124-584-00	ELECT	100uF	20%	10V
C356	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C357	1-126-157-11	ELECT	10uF	20%	16V
C358	1-126-157-11	ELECT	10uF	20%	16V
C359	1-124-464-11	ELECT	0.22uF	20%	50V
C360	1-126-157-11	ELECT	10uF	20%	16V
C371	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C372	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C405	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C406	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C410	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C411	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C412	1-124-589-11	ELECT	47uF	20%	16V
C413	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C414-416	1-126-157-11	ELECT	10uF	20%	16V
C418	1-126-157-11	ELECT	10uF	20%	16V
C421	1-126-163-11	ELECT	4.7uF	20%	50V
C510	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C511	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C512	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C513	1-126-157-11	ELECT	10uF	20%	16V
C549	1-163-116-00	CERAMIC CHIP	91PF	5%	50V
C550	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C551	1-126-163-11	ELECT	4.7uF	20%	50V
C552	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C553	1-124-234-00	ELECT	22uF	20%	16V
C554	1-124-584-00	ELECT	100uF	20%	10V
C555	1-125-701-11	DOUBLE LAYER	0.047F		5.5V
C556	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C573	1-163-117-00	CERAMIC CHIP	100PF	5%	50V

Ref. No.	Part No.	Description			Remark
C600	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C601	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C602	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C610	1-126-157-11	ELECT	10uF	20%	16V
C611	1-124-234-00	ELECT	22uF	20%	16V
C612	1-104-940-11	ELECT	10uF	20%	25V
C613	1-124-589-11	ELECT	47uF	20%	16V
C614	1-124-589-11	ELECT	47uF	20%	16V
C615	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C616	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C617	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C618	1-162-294-31	CERAMIC CHIP	0.001uF	10%	50V
C619	1-164-232-11	CERAMIC CHIP	0.01uF	10%	100V

< CONNECTOR >

* CN301	1-506-981-11	PIN, CONNECTOR 10P
CN302	1-573-121-11	PIN, CONNECTOR 12P
CN350	1-766-260-11	CONNECTOR, FFC/FPC (ZIF) 7P
* CN351	1-506-995-11	PIN, CONNECTOR (PC BOARD) 13P
CN550	1-580-907-31	PLUG, CONNECTOR (UNILINK IN CONTROL)
CN610	1-764-422-11	PLUG, CONNECTOR 12P

< DIODE >

D10	8-719-040-04	DIODE	MA721WK-(TX)
D12	8-719-034-63	DIODE	MA4091-H(QZ)
D14	8-719-800-76	DIODE	1SS226 (C212)
D149	8-719-800-76	DIODE	1SS226
D170	8-719-800-76	DIODE	1SS226
D171	8-719-034-22	DIODE	MA4039-M(QZ)
D350	8-719-800-76	DIODE	1SS226
D351	8-719-034-63	DIODE	MA4091-H(QZ)
D352	8-719-800-76	DIODE	1SS226
D510	8-719-800-76	DIODE	1SS226
D550	8-719-034-46	DIODE	MA4062-M(QZ)
D551	8-719-034-46	DIODE	MA4062-M(QZ)
D552	8-719-034-46	DIODE	MA4062-M(QZ)
D553	8-719-034-49	DIODE	MA4068-L(QZ)
D554	8-719-801-78	DIODE	1SS184
D556	8-719-034-54	DIODE	MA4075-M(QZ)
D558	8-719-034-42	DIODE	MA4056-M(QZ)
D560	8-719-400-20	DIODE	MA152WA
D562	8-719-400-20	DIODE	MA152WA
D563	8-719-800-76	DIODE	1SS226
D609	8-719-034-46	DIODE	MA4062-M(QZ)
D610	8-719-034-70	DIODE	MA4110-M(QZ)
D613	8-719-034-46	DIODE	MA4062-M(QZ)
D614	8-719-034-46	DIODE	MA4062-M(QZ)
D615	8-719-034-46	DIODE	MA4062-M(QZ)

Ref. No.	Part No.	Description	Remark
D616	8-719-034-46	DIODE MA4062-M(QZ)	
D617	8-719-034-46	DIODE MA4062-M(QZ)	
D618	8-719-034-46	DIODE MA4062-M(QZ)	
D619	8-719-034-46	DIODE MA4062-M(QZ)	
D620	8-719-034-46	DIODE MA4062-M(QZ)	
		< FERRITE BEAD >	
FB10	1-414-233-21	INDUCTOR, FERRITE BEAD	
FB11	1-414-233-21	INDUCTOR, FERRITE BEAD	
		< IC >	
IC10	8-759-823-81	IC LC7216M	
IC11	8-759-274-75	IC TDA1581T-T (C212)	
IC12	8-759-100-96	IC uPC4558G2	
IC150	8-752-063-44	IC CXA1646Q	
IC350	8-759-988-33	IC BA3430FS	
IC351	8-759-100-96	IC uPC4558G2	
IC352	8-759-823-87	IC LB1638M	
IC510	8-759-284-01	IC uPD75518GF-219-3B9	
IC512	8-759-167-83	IC PST600EMT-T1	
IC550	8-759-096-16	IC MM1175XFF	
IC610	8-759-182-75	IC BA3910B-V2	
		< JACK >	
J10	1-764-808-12	JACK (ANT) (ANTENNA)	
J510	1-566-822-11	JACK (REMOTE IN FOR ROTARY COMMANDER)	
		< COIL >	
L10	1-410-509-61	INDUCTOR 10uH	
L11	1-409-748-11	COIL (FILTER) (C212)	
L510	1-410-509-61	INDUCTOR 10uH	
		< TRANSISTOR >	
Q10	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q11	8-729-424-08	TRANSISTOR UN2111	
Q12	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q13	8-729-021-94	TRANSISTOR 2SK1657-T1B	
Q120	8-729-920-21	TRANSISTOR DTC314TKH04	
Q130	8-729-920-21	TRANSISTOR DTC314TKH04	
Q170	8-729-421-22	TRANSISTOR UN2211	
Q171	8-729-424-08	TRANSISTOR UN2111	
Q220	8-729-920-21	TRANSISTOR DTC314TKH04	
Q230	8-729-920-21	TRANSISTOR DTC314TKH04	
Q350	8-729-421-22	TRANSISTOR UN2211	
Q351	8-729-106-60	TRANSISTOR 2SB1115A-YQ	
Q352	8-729-421-22	TRANSISTOR UN2211	
Q353	8-729-424-08	TRANSISTOR UN2111	
Q354	8-729-807-12	TRANSISTOR 2SD1802-S	

Ref. No.	Part No.	Description	Remark
Q555	8-729-807-12	TRANSISTOR 2SD1802-S	
Q556	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q559	8-729-424-08	TRANSISTOR UN2111	
Q560	8-729-424-08	TRANSISTOR UN2111	
Q573	8-729-421-22	TRANSISTOR UN2211	
Q610	8-729-421-22	TRANSISTOR UN2211	
Q611	8-729-106-60	TRANSISTOR 2SB1115A-YQ	
Q612	8-729-807-12	TRANSISTOR 2SD1802-S	
Q613	8-729-807-12	TRANSISTOR 2SD1802-S	
Q614	8-729-020-67	TRANSISTOR XN1A312-TX	
		< RESISTOR >	
R9	1-216-037-00	METAL CHIP 330 5% 1/10W	
R10	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R11	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R12	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R13	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R14	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R15	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R16	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R17	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R18	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R19	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R20	1-216-093-00	METAL CHIP 68K 5% 1/10W (C212)	
R21	1-216-089-00	METAL CHIP 47K 5% 1/10W (C212)	
R22	1-216-065-00	METAL CHIP 4.7K 5% 1/10W (C212)	
R23	1-216-097-00	METAL CHIP 100K 5% 1/10W (C212)	
R24	1-216-033-00	METAL CHIP 220 5% 1/10W (C212)	
R25	1-216-117-00	METAL CHIP 680K 5% 1/10W (C212)	
R26	1-216-105-00	METAL CHIP 220K 5% 1/10W (C212)	
R27	1-216-065-00	METAL CHIP 4.7K 5% 1/10W (C212)	
R28	1-216-067-00	METAL CHIP 5.6K 5% 1/10W (C212)	
R29	1-216-065-00	METAL CHIP 4.7K 5% 1/10W (C212)	
R30	1-216-067-00	METAL CHIP 5.6K 5% 1/10W (C212)	
R31	1-216-116-00	METAL CHIP 620K 5% 1/10W (C212)	
R32	1-216-089-00	METAL CHIP 47K 5% 1/10W (C212)	
R33	1-216-017-00	METAL CHIP 47 5% 1/10W (C212)	
R34	1-216-085-00	METAL CHIP 33K 5% 1/10W (C212)	
R35	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R36	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R51	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R52	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R55	1-216-049-00	METAL CHIP 1K 5% 1/10W (C210)	
R55	1-216-067-00	METAL CHIP 5.6K 5% 1/10W (C212)	
R56	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R61	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R62	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R65	1-216-049-00	METAL CHIP 1K 5% 1/10W (C210)	
R65	1-216-067-00	METAL CHIP 5.6K 5% 1/10W (C212)	

MAIN

Ref. No.	Part No.	Description			Remark
R66	1-216-073-00	METAL CHIP	10K	5%	1/10W
R120	1-216-049-00	METAL CHIP	1K	5%	1/10W
R121	1-216-081-00	METAL CHIP	22K	5%	1/10W
R123	1-216-077-00	METAL CHIP	15K	5%	1/10W
R130	1-216-049-00	METAL CHIP	1K	5%	1/10W
R131	1-216-081-00	METAL CHIP	22K	5%	1/10W
R133	1-216-077-00	METAL CHIP	15K	5%	1/10W
R149	1-216-073-00	METAL CHIP	10K	5%	1/10W
R150	1-216-214-00	METAL GLAZE	4.7K	5%	1/8W
R151	1-216-214-00	METAL GLAZE	4.7K	5%	1/8W
R171	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R172	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R173	1-216-073-00	METAL CHIP	10K	5%	1/10W
R220	1-216-049-00	METAL CHIP	1K	5%	1/10W
R221	1-216-081-00	METAL CHIP	22K	5%	1/10W
R223	1-216-077-00	METAL CHIP	15K	5%	1/10W
R230	1-216-049-00	METAL CHIP	1K	5%	1/10W
R231	1-216-081-00	METAL CHIP	22K	5%	1/10W
R233	1-216-077-00	METAL CHIP	15K	5%	1/10W
R309	1-216-033-00	METAL CHIP	220	5%	1/10W
R312	1-216-079-00	METAL CHIP	18K	5%	1/10W
R313	1-216-077-00	METAL CHIP	15K	5%	1/10W
R314	1-216-109-00	METAL CHIP	330K	5%	1/10W
R317	1-216-089-00	METAL CHIP	47K	5%	1/10W
R319	1-216-073-00	METAL CHIP	10K	5%	1/10W
R350	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R351	1-216-073-00	METAL CHIP	10K	5%	1/10W
R353	1-216-049-00	METAL CHIP	1K	5%	1/10W
R355	1-216-150-00	METAL GLAZE	10	5%	1/8W
R356	1-216-029-00	METAL CHIP	150	5%	1/10W
R357	1-216-150-00	METAL GLAZE	10	5%	1/8W
R358	1-216-097-00	METAL CHIP	100K	5%	1/10W
R359	1-216-150-00	METAL GLAZE	10	5%	1/8W
R360	1-216-150-00	METAL GLAZE	10	5%	1/8W
R409	1-216-033-00	METAL CHIP	220	5%	1/10W
R410	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R412	1-216-079-00	METAL CHIP	18K	5%	1/10W
R413	1-216-077-00	METAL CHIP	15K	5%	1/10W
R414	1-216-109-00	METAL CHIP	330K	5%	1/10W
R415	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R416	1-216-081-00	METAL CHIP	22K	5%	1/10W
R417	1-216-089-00	METAL CHIP	47K	5%	1/10W
R419	1-216-073-00	METAL CHIP	10K	5%	1/10W
R500	1-216-073-00	METAL CHIP	10K	5%	1/10W
R504	1-216-081-00	METAL CHIP	2.2K	5%	1/10W
R505	1-216-097-00	METAL CHIP	100K	5%	1/10W
R506	1-216-097-00	METAL CHIP	100K	5%	1/10W
R507-509	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R510	1-216-089-00	METAL CHIP	47K	5%	1/10W
R513	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R514	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R515-521	1-216-097-00	METAL CHIP	100K	5%	1/10W
R524-526	1-216-097-00	METAL CHIP	100K	5%	1/10W
R529	1-216-097-00	METAL CHIP	100K	5%	1/10W (C210)
R530	1-216-097-00	METAL CHIP	100K	5%	1/10W (C212)
R531	1-216-097-00	METAL CHIP	100K	5%	1/10W
R533	1-216-089-00	METAL CHIP	47K	5%	1/10W
R535	1-216-073-00	METAL CHIP	10K	5%	1/10W
R536	1-216-073-00	METAL CHIP	10K	5%	1/10W
R550	1-216-025-00	METAL CHIP	100	5%	1/10W
R551	1-216-025-00	METAL CHIP	100	5%	1/10W
R552	1-216-073-00	METAL CHIP	10K	5%	1/10W
R553	1-216-017-00	METAL CHIP	47	5%	1/10W
R554	1-216-083-00	METAL CHIP	27K	5%	1/10W
R555	1-216-089-00	METAL CHIP	47K	5%	1/10W
R556	1-216-089-00	METAL CHIP	47K	5%	1/10W
R558-560	1-216-097-00	METAL CHIP	100K	5%	1/10W
R561	1-216-675-11	METAL CHIP	10K	0.5%	1/10W
R562	1-216-675-11	METAL CHIP	10K	0.5%	1/10W
R563	1-216-025-00	METAL CHIP	100	5%	1/10W
R564	1-216-025-00	METAL CHIP	100	5%	1/10W
R566	1-216-206-00	METAL GLAZE	2.2K	5%	1/8W
R567	1-216-073-00	METAL CHIP	10K	5%	1/10W
R577	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R601	1-216-025-00	METAL CHIP	100	5%	1/10W
R610	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R611	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R612	1-216-198-00	METAL CHIP	1K	5%	1/8W
R613	1-216-073-00	METAL CHIP	10K	5%	1/10W
R614	1-216-206-00	METAL GLAZE	2.2K	5%	1/8W
R625	1-216-057-00	METAL CHIP	2.2K	5%	1/10W

< VARIABLE RESISTOR >

RV10	1-238-596-11	RES, ADJ, CARBON 470 (C212)

< SWITCH >

S510	1-571-478-11	SWITCH, SLIDE (POWER SELECT)
SW501	1-692-431-21	SWITCH, TACTILE (RESET)

< TUNER UNIT >

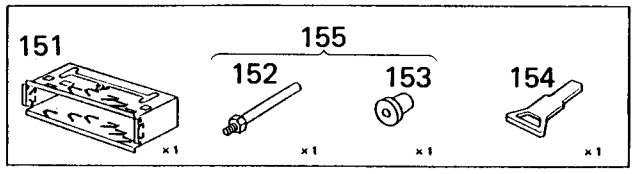
TU10	A-3282-003-A	TUNER UNIT (TUX-001A)

Ref. No.	Part No.	Description	Remark
		< VIBRATOR >	
X10	1-567-848-11	VIBRATOR, CRYSTAL (7.2MHz)	
X510	1-567-821-11	VIBRATOR, CRYSTAL (4.19MHz)	
		MISCELLANEOUS	
8	1-765-081-11	CORD (WITH CONNECTOR)	
130	1-765-460-11	CORD (WITH CONNECTOR)	
F901	1-533-326-11	FUSE (BLADE TYPE) (AUTO FUSE) (3A)	
F902	1-533-331-11	FUSE (BLADE TYPE) (AUTO FUSE) (15A)	
HP901	1-500-105-11	HEAD, MAGNETIC (PLAYBACK)	
M901	X-3368-684-1	MOTOR ASSY, MAIN	
M902	X-3368-685-1	MOTOR ASSY, SUB	
S901	1-692-885-12	SWITCH, ROTARY SLIDE (TAPE OPERATION)	

HARDWARE LIST

#1	7-621-770-67	SCREW +PTT 2.6X6 (S)	
#2	7-621-770-XX	SCREW +PTT 2.6X8 (S)	
#3	7-624-104-04	STOP RING 2.0, TYPE -E	
#4	7-627-553-17	PRECISION SCREW +P 2X2 TYPE 3	
#5	7-628-253-05	SCREW +PS 2X4	
#6	7-685-105-19	SCREW +P 2X8 TYPE2 NON-SLIT	
#7	7-685-134-19	SCREW +P 2.6X8 TYPE2 NON-SLIT	
#8	7-621-773-95	SCREW +PTT 2.6X6 (S)	
#9	7-621-772-10	SCREW +B 2X4	

ACCESSORIES & PACKING MATERIALS

	3-759-197-11	MANUAL, INSTRUCTION, INSTALL (ENGLISH, FRENCH, GERMAN, ITALIAN)
	3-759-197-41	MANUAL, INSTRUCTION, INSTALL (SPANISH, DUTCH, SWEDISH, PORTUGUESE) (C210)
	3-759-198-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, GERMAN, ITALIAN)
	3-759-198-41	MANUAL, INSTRUCTION (SPANISH, DUTCH, SWEDISH, PORTUGUESE) (C210)
	X-3367-795-1	CASE ASSY

Ref. No.	Part No.	Description	Remark
		MOUNTING HARDWARE	
151	3-916-161-01	FRAME, FITTING	
152	3-386-828-01	SCREW, FITTING	
153	3-349-410-01	BUSHING	
154	3-388-078-01	KEY	
155	X-3366-405-1	SCREW ASSY (EXP), FITTING